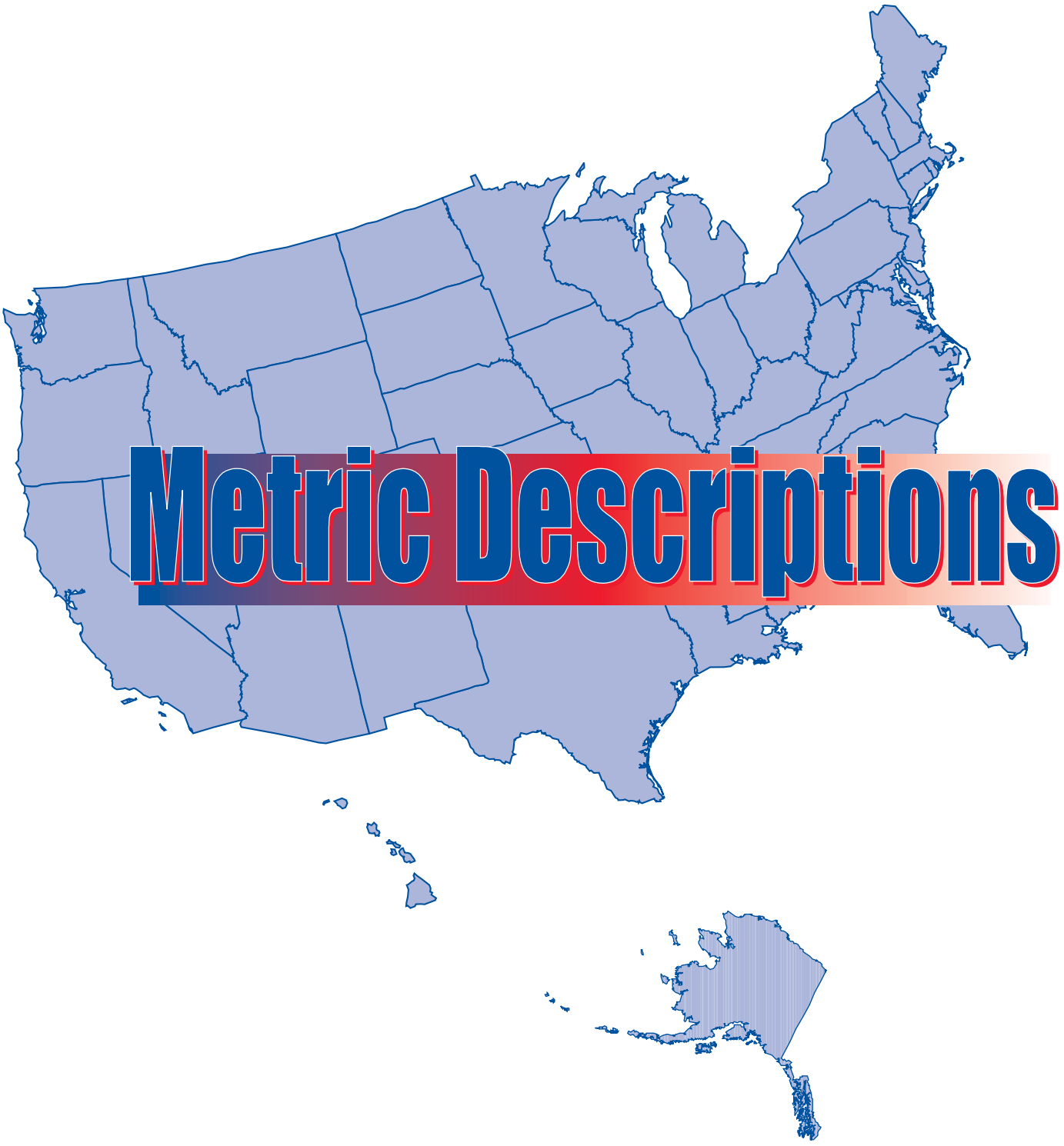


Metric Descriptions

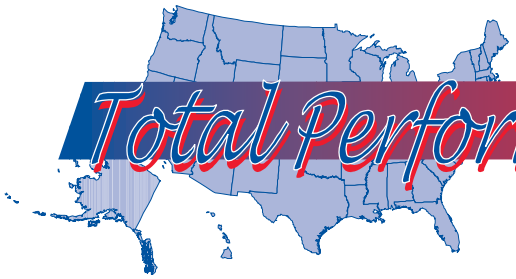
2. Contents

This section contains a 2-page description of each of the 38 metrics developed to describe the science and technology (S&T) infrastructure of individual states. Twenty-five of these metrics are measures of inputs, and thirteen are measures of outputs.

Each metric description contains a definition of the metric, a summary of its relevance including the national performance on that metric, data considerations and limitations, and the data source references.

The actual data used to calculate the metric value for each state and for the District of Columbia and Puerto Rico are shown in chart format. Numerical rankings for each state are provided on the same chart, with 1 designating the highest performance and 50 designating the lowest performance on that particular metric. The indicator value index that each state's performance represents is shown in the last column of the chart. A value of 100 indicates that a state's performance on that metric is identical with the average performance of the 50 states. A value that is greater than 100 denotes performance above the average of the fifty states while conversely, a value of less than 100 denotes performance below the average.

The indicator value index data also are presented graphically on an accompanying U.S. map in which the color intensity of each state represents that state's performance relative to the metric's value for the 50 states.



Total Performed R&D Expenditures

Definition

Total performed research & development (R&D) expenditures per $1,000 of gross state product (GSP) is calculated by dividing the total amount spent on R&D performance in each state by that state's GSP. R&D expenditures represent the total of the basic research, applied research, and development performed by private industry, federal government, academic, and non-profit organizations located in the state. GSP is the value added in production by the labor and property located in a state.

Relevance

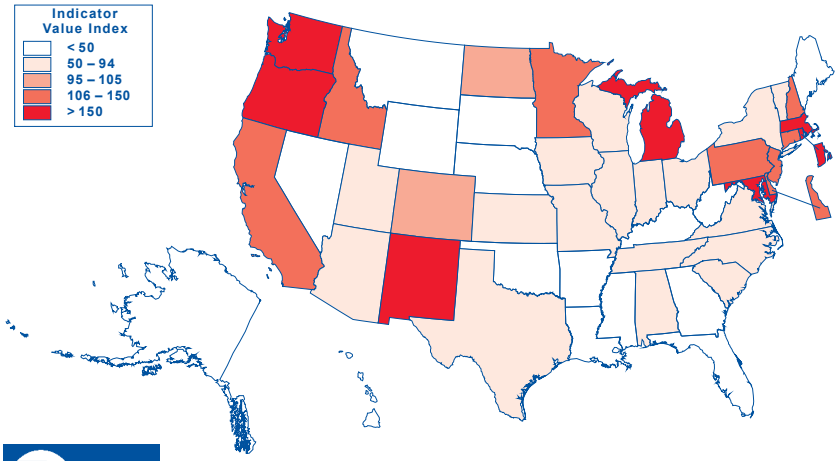
This metric describes the importance of R&D activities to a state's economy. It is directly related to the number of workers and capital employed in the conduct of R&D. The total performed R&D expenditures for the 50 states were $253.3 billion or $25.15 per $1,000 of U.S. gross domestic product (2.5% of GDP). The median total performed R&D expenditure for the 50 states was $18.75 per $1,000 of GSP.

Long-term economic growth is universally deemed to be highly dependent on the R&D activities of scientists and engineers. However, the precise relationship between R&D and improvements in quality and productivity is difficult to measure. Further, that relationship is thought to vary greatly by the types of products and services being developed. In the short-run, expenditures on R&D tell little about the ultimate value of what is received for the money being spent. Significant scientific breakthroughs can result from small expenditures, or large expenditures can yield few commercial opportunities. R&D expenditures also provide insight into the perceived importance of research and, hence, how supportive the business climate is to research.

Data Considerations and Limitations

R&D expenditure estimates are based on surveys of R&D performers who are asked to indicate how much they spend, the character of the research, and where the funds originated. The use of performer reporting reduces the possibility of double-counting. The surveys are conducted by the Division of Science Resources Statistics of the National Science Foundation.

The federal R&D performance expenditure data reported by universities and industry will differ from the federal agency reported R&D funding totals because expenditures may occur in a different year than when the funds were originally authorized, obligated, or outlayed. Performers and funders of R&D may differ in what they report as R&D. Another difficulty in tracking R&D expenditures is that funds are further passed through to other performers.



Source of Data

Expenditures for Total R&D Performed: Total R&D 2001 was compiled by the National Science Foundation, Division of Science Resources Statistics <http://www.nsf.gov/sbe/srs/>. The data will be available in the next edition of the report, *National Patterns of Research and Development Resources: 2003*, which is expected to be released during the first quarter of 2004.

Gross State Product: U.S. Department of Commerce, Bureau of Economic Analysis. (2003, May). Gross State Product: 2001. <http://www.bea.gov/bea/regional/gsp/> (2003, June 3).

Technology Administration

Expenditures for Total R&D Performed per $1,000 of GSP: 2001

STATE	Total R&D, millions	GSP, millions	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	$2,251	$121,490	$18.53	26	74
Alaska	$297	$28,581	$10.37	40	41
Arizona	$3,048	$160,687	$18.97	25	75
Arkansas	$451	$67,913	$6.65	46	26
California	$50,959	$1,359,265	$37.49	8	149
Colorado	$4,313	$173,772	$24.82	16	99
Connecticut	$5,311	$166,165	$31.96	12	127
Delaware	$1,316	$40,509	$32.50	11	129
Florida	$5,642	$491,488	$11.48	35	46
Georgia	$3,236	$299,874	$10.79	37	43
Hawaii	$358	$43,710	$8.19	44	33
Idaho	$1,259	$36,905	$34.11	9	136
Illinois	$10,472	$475,541	$22.02	21	88
Indiana	$4,235	$189,919	$22.30	19	89
Iowa	$1,324	$90,942	$14.56	31	58
Kansas	$1,597	$87,196	$18.32	28	73
Kentucky	$951	$120,266	$7.90	45	31
Louisiana	$827	$148,697	$5.56	49	22
Maine	$389	$37,449	$10.38	39	41
Maryland	$11,379	$195,007	$58.35	2	232
Massachusetts	$14,665	$287,802	$50.95	3	203
Michigan	$15,533	$320,470	$48.47	4	193
Minnesota	$5,010	$188,050	$26.64	15	106
Mississippi	$650	$67,125	$9.69	42	39
Missouri	$2,550	$181,493	$14.05	33	56
Montana	$239	$22,635	$10.56	38	42
Nebraska	$580	$56,967	$10.17	41	40
Nevada	$444	$79,220	$5.60	48	22
New Hampshire	$1,587	$47,183	$33.63	10	134
New Jersey	$11,392	$365,388	$31.18	13	124
New Mexico	$3,947	$55,426	$71.22	1	283
New York	$14,422	$826,488	$17.45	29	69
North Carolina	$5,825	$275,615	$21.13	23	84
North Dakota	$461	$19,005	$24.27	17	96
Ohio	$8,790	$373,708	$23.52	18	94
Oklahoma	$872	$93,855	$9.29	43	37
Oregon	$5,447	$120,055	$45.37	6	180
Pennsylvania	$11,156	$408,373	$27.32	14	109
Rhode Island	$1,579	$36,939	$42.75	7	170
South Carolina	$1,447	$115,204	$12.56	34	50
South Dakota	$141	$24,251	$5.80	47	23
Tennessee	$2,651	$182,515	$14.53	32	58
Texas	$12,722	$763,874	$16.65	30	66
Utah	$1,495	$70,409	$21.23	22	84
Vermont	$423	$19,149	$22.07	20	88
Virginia	$5,544	$273,070	$20.30	24	81
Washington	$10,372	$222,950	$46.52	5	185
West Virginia	$466	$42,368	$11.00	36	44
Wisconsin	$3,249	$177,354	$18.32	27	73
Wyoming	$82	$20,418	$4.04	50	16
50 States	**$253,355**	**$10,072,735**	**$25.15**	**—**	**100**
Dist of Columbia	$2,543	$64,459	$39.44	—	157
Puerto Rico	N/A	—	—	—	—

[1] (Total R&D / GSP) x $1,000

[2] 100 equals 50-state indicator value

Industry-performed R&D Expenditures

Definition

This metric indicates the amount of research & development (R&D) expenditures that are actually performed by all non-farm industries in a state divided by the gross state product (GSP) of that state. R&D expenditures represent the total of basic research, applied research, and development performed by the industrial sector. The sources for that funding can be from government, academia, non-profits, or industry. GSP is the value added in production by the labor and property located in a state.

Relevance

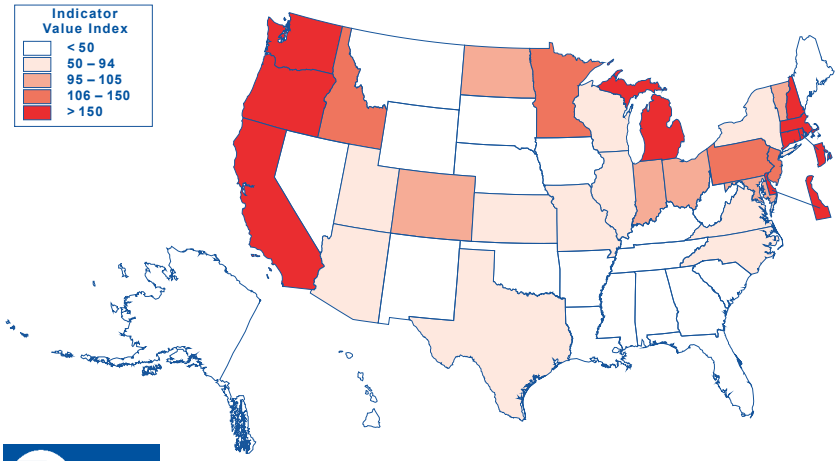
This metric describes the importance of R&D activities to the industrial sector of a state's economy. The total industry-performed R&D expenditures for the 50 states were $188.4 billion or $18.71 per $1,000 of U.S. gross domestic product (1.9% of GDP). The median expenditure for industry-performed R&D for the 50 states was $13.55 per $1,000 of GSP. Industry performed 74.3% of all the R&D performed in the 50 states.

The value of industry-performed R&D is often hidden in the ultimate value of the innovation and product improvements of industrial goods and services. Further, value from the R&D may become evident years after the R&D actually takes place. However, without the continuous flow of industrial R&D, companies will lose competitiveness. The level and intensity of industrial R&D in the states indicate where industry decides to locate its scientists. In addition to company synergies, these location decisions may be influenced by availability of a talented workforce, outstanding supporting research services, and overall quality of life in the states.

Data Considerations and Limitations

R&D performance estimates are based on the *Survey of Industrial Research and Development: 2001* conducted by the Division of Science Resources Statistics of the National Science Foundation. Performers are asked to report how much they spend on R&D, the nature of the R&D, and where the funds originated. A survey questionnaire is sent to all companies that spend more than $5 million annually on R&D in the U.S. and to a sample of all other firms. The level of R&D performance is determined by using information from previous surveys or other sources. Remaining firms are subjected to probability sampling and may not receive a questionnaire for a given survey year. Therefore, in states dominated by small companies, the R&D performance estimates could be subject to significantly higher sampling variability. Data for the following states have imputation of more than 50%: Arkansas, Kansas, Louisiana, Mississippi, Montana, Oklahoma, Rhode Island, South Dakota, Washington, and Wyoming.

The R&D performance estimates for 2001 reflect the use of a new methodology that was designed to reduce the large year-to-year variations in the previous state estimates. Under the new methodology, a portion of the amount of R&D reported by some companies not selected for the sample with certainty is allocated among all the states in which there was industrial activity rather than being assigned to the state where the company's headquarters is located. Details regarding the new methodology can be found at http://www.nsf.gov/sbe/srs/sird/start.htm.



Source of Data

Expenditures for Industry-performed R&D: Industry R&D was collected and compiled by the National Science Foundation, Division of Science Resources Statistics <http://www.nsf.gov/sbe/srs/>, Survey of Industrial Research and Development: 2001. The data will be available online in the report, *Research and Development in Industry: 2001, Table A-30*, which is expected to be released during the second quarter of 2004.

Gross State Product: U.S. Department of Commerce, Bureau of Economic Analysis. (2003, May). Gross State Product: 2001. <http://www.bea.gov/bea/regional/gsp/> (2003, June 3).

Technology Administration

Expenditures for Industry-performed R&D per $1,000 of GSP: 2001

STATE	Industry R&D, millions	GSP, millions	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	$905	$121,490	$7.45	34	40
Alaska	$68	$28,581	$2.39	47	13
Arizona	$2,257	$160,687	$14.05	24	75
Arkansas	$254	$67,913	$3.75	42	20
California	$40,430	$1,359,265	$29.74	7	159
Colorado	$3,082	$173,772	$17.74	18	95
Connecticut	$4,686	$166,165	$28.20	9	151
Delaware	$1,232	$40,509	$30.41	6	163
Florida	$3,755	$491,488	$7.64	33	41
Georgia	$1,912	$299,874	$6.38	36	34
Hawaii	$93	$43,710	$2.12	49	11
Idaho	$884	$36,905	$23.97	11	128
Illinois	$8,232	$475,541	$17.31	20	93
Indiana	$3,583	$189,919	$18.87	15	101
Iowa	$817	$90,942	$8.98	30	48
Kansas	$1,299	$87,196	$14.90	23	80
Kentucky	$636	$120,266	$5.29	39	28
Louisiana	$316	$148,697	$2.13	48	11
Maine	$249	$37,449	$6.64	35	35
Maryland	$3,682	$195,007	$18.88	14	101
Massachusetts	$11,240	$287,802	$39.05	3	209
Michigan	$14,283	$320,470	$44.57	1	238
Minnesota	$4,355	$188,050	$23.16	12	124
Mississippi	$219	$67,125	$3.27	45	17
Missouri	$1,792	$181,493	$9.87	29	53
Montana	$70	$22,635	$3.09	46	16
Nebraska	$306	$56,967	$5.38	38	29
Nevada	$290	$79,220	$3.66	43	20
New Hampshire	$1,339	$47,183	$28.38	8	152
New Jersey	$10,164	$365,388	$27.82	10	149
New Mexico	$231	$55,426	$4.16	41	22
New York	$10,884	$826,488	$13.17	26	70
North Carolina	$4,138	$275,615	$15.01	22	80
North Dakota	$347	$19,005	$18.24	16	97
Ohio	$6,694	$373,708	$17.91	17	96
Oklahoma	$543	$93,855	$5.78	37	31
Oregon	$4,962	$120,055	$41.33	2	221
Pennsylvania	$8,967	$408,373	$21.96	13	117
Rhode Island	$1,134	$36,939	$30.70	5	164
South Carolina	$921	$115,204	$8.00	32	43
South Dakota	$87	$24,251	$3.60	44	19
Tennessee	$1,503	$182,515	$8.23	31	44
Texas	$9,839	$763,874	$12.88	27	69
Utah	$1,069	$70,409	$15.19	21	81
Vermont	$339	$19,149	$17.68	19	95
Virginia	$2,957	$273,070	$10.83	28	58
Washington	$8,691	$222,950	$38.98	4	208
West Virginia	$211	$42,368	$4.97	40	27
Wisconsin	$2,469	$177,354	$13.92	25	74
Wyoming	$28	$20,418	$1.39	50	7
50 States	**$188,446**	**$10,072,735**	**$18.71**	**—**	**100**
Dist of Columbia	$242	$64,459	$3.75	—	20
Puerto Rico	N/A	—	—	—	—

[1] (Industry R&D / GSP) x $1,000

[2] 100 equals 50-state indicator value

Federally Performed R&D Expenditures

Definition

Federally performed research & development (R&D) per $1,000 of gross state product (GSP) is computed by dividing the amount of federally performed R&D in each state by the state's GSP. Federally performed R&D is the sum of all basic research, applied research, and development performed by federal agencies located in a state. Federally funded R&D centers that are administered by private industry are excluded from this category, as are those administered by colleges, universities, or non-profits. GSP is the value added production by the labor and property located in a state.

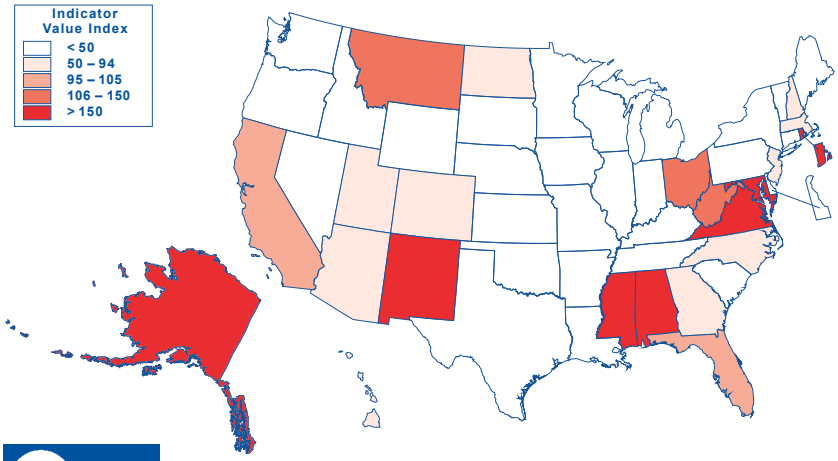
Relevance

This metric describes the importance of federal R&D performance to the economies of the states. In 2001, the federal government performed $17.7 billion in R&D in the 50 states. Federal agencies performed about 7.0% of the total R&D. The total federally performed R&D expenditures for the 50 states amounted to $1.75 per $1,000 of U.S. gross domestic product (0.2% of GDP). The median expenditure for federally performed R&D in the 50 states was $0.73 per $1,000 of GSP.

Federal performance of R&D is indicative of where the federal government has R&D facilities. Examples of these R&D facilities include national laboratories, state agricultural research stations, defense institutes and laboratories, observatories, and atmospheric research centers. The locations for these facilities were often selected for strategic, national security, and political reasons. However, they also reflect upon the labor force and research support of the state and local area in which they are sited.

Data Considerations and Limitations

Federally performed R&D expenditure estimates are based on the *Survey of Federal Funds for R&D* conducted by the National Science Foundation. Federal R&D data include costs associated with the administration of intramural and extramural programs by federal personnel as well as actual intramural performance.



Source of Data

Expenditures for Federally Performed R&D: Federal R&D was collected and compiled by the National Science Foundation, Division of Science Resources Statistics <http://www.nsf.gov/sbe/srs/>, Survey of Federal Funds for Research and Development: Fiscal Years 2001, 2002, and 2003. The data will be available online in the report, *Federal Funds for Research and Development: Fiscal Years 2001, 2002, and 2003*, which is expected to be released during the second quarter of 2004.

Gross State Product: U.S. Department of Commerce, Bureau of Economic Analysis. (2003, May). Gross State Product: 2001. <http://www.bea.gov/bea/regional/gsp/> (2003, June 3); Puerto Rico Planning Board, Program of Economic and Social Planning. *Appendix Statistics: Table 1—Selected Series of Income and Product, Total and Per Capita*. <http://www.jp.gobierno.pr>. (2003, October 2).

Expenditures for Federally Performed R&D per $1,000 of GSP: 2001

STATE	Federal R&D, thousands	GSP, millions	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	$870,416	$121,490	$7.16	3	409
Alaska	$98,997	$28,581	$3.46	6	198
Arizona	$235,031	$160,687	$1.46	17	83
Arkansas	$52,304	$67,913	$0.77	25	44
California	$2,259,305	$1,359,265	$1.66	12	95
Colorado	$265,565	$173,772	$1.53	15	87
Connecticut	$93,127	$166,165	$0.56	30	32
Delaware	$3,146	$40,509	$0.08	50	4
Florida	$865,362	$491,488	$1.76	11	100
Georgia	$310,156	$299,874	$1.03	21	59
Hawaii	$70,254	$43,710	$1.61	13	92
Idaho	$21,815	$36,905	$0.59	28	34
Illinois	$78,766	$475,541	$0.17	48	9
Indiana	$55,795	$189,919	$0.29	41	17
Iowa	$39,496	$90,942	$0.43	36	25
Kansas	$24,928	$87,196	$0.29	42	16
Kentucky	$13,375	$120,266	$0.11	49	6
Louisiana	$74,386	$148,697	$0.50	32	29
Maine	$9,433	$37,449	$0.25	44	14
Maryland	$5,435,114	$195,007	$27.87	1	1,589
Massachusetts	$362,811	$287,802	$1.26	19	72
Michigan	$119,244	$320,470	$0.37	39	21
Minnesota	$32,903	$188,050	$0.17	47	10
Mississippi	$181,275	$67,125	$2.70	7	154
Missouri	$42,889	$181,493	$0.24	45	13
Montana	$44,039	$22,635	$1.95	10	111
Nebraska	$26,014	$56,967	$0.46	34	26
Nevada	$34,120	$79,220	$0.43	37	25
New Hampshire	$42,973	$47,183	$0.91	22	52
New Jersey	$523,933	$365,388	$1.43	18	82
New Mexico	$493,547	$55,426	$8.90	2	508
New York	$270,926	$826,488	$0.33	40	19
North Carolina	$441,048	$275,615	$1.60	14	91
North Dakota	$27,871	$19,005	$1.47	16	84
Ohio	$906,451	$373,708	$2.43	9	138
Oklahoma	$53,475	$93,855	$0.57	29	32
Oregon	$81,701	$120,055	$0.68	27	39
Pennsylvania	$177,837	$408,373	$0.44	35	25
Rhode Island	$253,826	$36,939	$6.87	4	392
South Carolina	$54,738	$115,204	$0.48	33	27
South Dakota	$20,534	$24,251	$0.85	23	48
Tennessee	$100,934	$182,515	$0.55	31	32
Texas	$526,748	$763,874	$0.69	26	39
Utah	$82,407	$70,409	$1.17	20	67
Vermont	$5,165	$19,149	$0.27	43	15
Virginia	$1,540,051	$273,070	$5.64	5	322
Washington	$178,876	$222,950	$0.80	24	46
West Virginia	$110,923	$42,368	$2.62	8	149
Wisconsin	$40,712	$177,354	$0.23	46	13
Wyoming	$8,275	$20,418	$0.41	38	23
50 States	**$17,663,017**	**$10,072,735**	**$1.75**	**—**	**100**
Dist of Columbia	$1,818,717	$64,459	$28.22	—	1,609
Puerto Rico	$10,552	$44,173	$0.24	—	14

[1] (Federal R&D / GSP) x $1,000

[2] 100 equals 50-state indicator value

University-performed R&D Expenditures

Definition

Expenditures for university-performed research & development (R&D) per $1,000 of gross state product (GSP) are calculated by dividing the amount of research performed by universities and colleges in a state by that state's GSP. R&D performance includes the total of basic research, applied research, and development. The research performed by universities may be funded by the federal government, non-federal governments, industry, non-profits, or the universities themselves. GSP is the value added production by the labor and property located in a state.

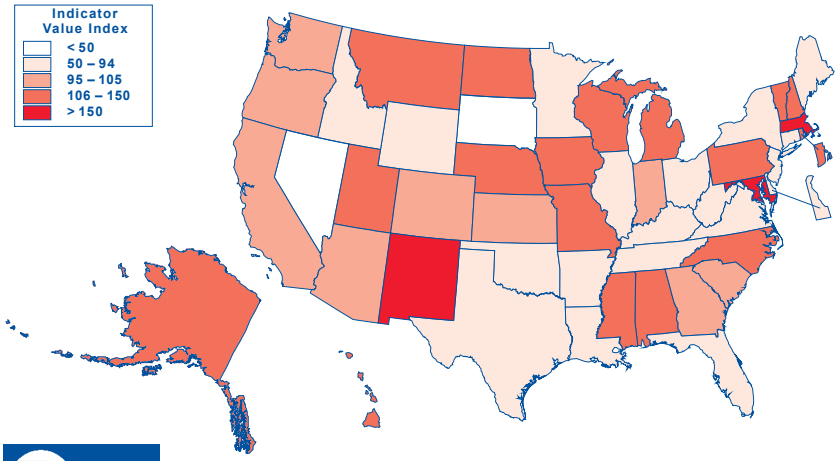
Relevance

This metric describes the importance of university research to a state's economy. Universities tend to be oriented toward basic research that focuses on long-term, fundamental knowledge and discoveries of new underlying principles. In 2001, universities performed $32.4 billion in research or 12.8% of the total R&D performed in the 50 states. The total university-performed R&D expenditures for the 50 states amounted to $3.22 per $1,000 of U.S. gross domestic product in 2001 (0.3% of GDP). The median expenditure for university-performed R&D in the 50 states was $3.13 per $1,000 of GSP.

Because universities specialize in basic research, the economic impact of their R&D accrues over many years. Further, universities have historically advocated publishing their research findings and thus disseminated their research findings well beyond their state boundaries. Nonetheless, universities' faculty, facilities, and knowledge contribute substantially to the resource base that attracts new businesses to a state. World-class research institutions are frequently cited as inducements for new businesses to locate in an area. In recent times, universities have become more likely to conduct applied R&D for the benefit of particular sponsors. This type of research impacts the competitiveness of local businesses more directly and in a shorter time frame than does basic research. Finally, some research universities have begun to support the process of new business formation based on intellectual property developed at the university by its faculty, staff, and students.

Data Considerations and Limitations

Data for this metric were collected from the *Survey of R&D Expenditures at Universities and Colleges* conducted by the National Science Foundation. The 2001 data pertains to all academic institutions, not just doctorate-granting institutions used in years prior to the 1998 data collection.



Source of Data

Expenditures for University-performed R&D: National Science Foundation, Division of Science Resources Statistics. *Academic Research and Development Expenditures: Fiscal Year 2001*, NSF 03-316, Project Officer, M. Marge Machen (Arlington, VA 2003).

Gross State Product: U.S. Department of Commerce, Bureau of Economic Analysis. (2003, May). Gross State Product: 2001. <http://www.bea.gov/bea/regional/gsp/> (2003, June 3); Puerto Rico Planning Board, Program of Economic and Social Planning. *Appendix Statistics: Table 1—Selected Series of Income and Product, Total and Per Capita*. <http://www.jp.gobierno.pr>. (2003, October 2).

Technology Administration

Expenditures for University-performed R&D per $1,000 of GSP: 2001

STATE	University R&D, thousands	GSP, millions	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	$445,299	$121,490	$3.67	17	114
Alaska	$115,601	$28,581	$4.04	13	126
Arizona	$500,548	$160,687	$3.12	26	97
Arkansas	$140,741	$67,913	$2.07	42	64
California	$4,422,032	$1,359,265	$3.25	23	101
Colorado	$572,950	$173,772	$3.30	22	102
Connecticut	$498,745	$166,165	$3.00	30	93
Delaware	$79,985	$40,509	$1.97	45	61
Florida	$997,048	$491,488	$2.03	44	63
Georgia	$988,883	$299,874	$3.30	21	102
Hawaii	$156,976	$43,710	$3.59	19	112
Idaho	$82,496	$36,905	$2.24	41	69
Illinois	$1,280,807	$475,541	$2.69	35	84
Indiana	$584,418	$189,919	$3.08	28	96
Iowa	$439,810	$90,942	$4.84	4	150
Kansas	$268,800	$87,196	$3.08	27	96
Kentucky	$296,895	$120,266	$2.47	38	77
Louisiana	$432,356	$148,697	$2.91	33	90
Maine	$68,034	$37,449	$1.82	47	56
Maryland	$1,644,467	$195,007	$8.43	1	262
Massachusetts	$1,576,517	$287,802	$5.48	2	170
Michigan	$1,107,195	$320,470	$3.45	20	107
Minnesota	$469,208	$188,050	$2.50	37	78
Mississippi	$242,133	$67,125	$3.61	18	112
Missouri	$678,460	$181,493	$3.74	16	116
Montana	$107,744	$22,635	$4.76	6	148
Nebraska	$241,638	$56,967	$4.24	8	132
Nevada	$115,934	$79,220	$1.46	49	45
New Hampshire	$196,975	$47,183	$4.17	9	130
New Jersey	$609,470	$365,388	$1.67	48	52
New Mexico	$274,209	$55,426	$4.95	3	154
New York	$2,476,090	$826,488	$3.00	31	93
North Carolina	$1,137,279	$275,615	$4.13	11	128
North Dakota	$84,574	$19,005	$4.45	7	138
Ohio	$995,972	$373,708	$2.67	36	83
Oklahoma	$255,217	$93,855	$2.72	34	84
Oregon	$366,023	$120,055	$3.05	29	95
Pennsylvania	$1,687,457	$408,373	$4.13	10	128
Rhode Island	$142,564	$36,939	$3.86	15	120
South Carolina	$361,404	$115,204	$3.14	25	97
South Dakota	$32,185	$24,251	$1.33	50	41
Tennessee	$423,264	$182,515	$2.32	39	72
Texas	$2,244,117	$763,874	$2.94	32	91
Utah	$338,127	$70,409	$4.80	5	149
Vermont	$76,882	$19,149	$4.01	14	125
Virginia	$610,717	$273,070	$2.24	40	69
Washington	$706,579	$222,950	$3.17	24	98
West Virginia	$79,076	$42,368	$1.87	46	58
Wisconsin	$728,618	$177,354	$4.11	12	128
Wyoming	$41,632	$20,418	$2.04	43	63
50 States	**$32,424,151**	**$10,072,735**	**$3.22**	**—**	**100**
Dist of Columbia	$228,110	$64,459	$3.54	—	110
Puerto Rico	$63,755	$44,173	$1.44	—	45

[1] (University R&D / GSP) x $1,000

[2] 100 equals 50-state indicator value

Federal R&D Obligations

Definition

Federal obligations for research & development (R&D) per $1,000 of gross state product (GSP) are calculated by dividing federal R&D obligations committed to a state by that state's GSP. Federal obligations are the amounts of money for orders placed, contracts awarded, services received, and similar transactions directed to a state during a given period of time regardless of when the funds were appropriated and when future payment of money is required. The R&D obligations include the costs of specific R&D projects as well as the applicable overhead costs such as planning, laboratory overhead, pay of military personnel, and departmental administration. R&D obligations may be given to federal agencies, industrial firms, universities and colleges, non-profits, state and local governments, and federally funded R&D centers. GSP is the value added production by the labor and property located in a state.

The geographic distribution of Department of Defense development funding to industry reflects only the location of prime contractors, not the numerous subcontractors who perform much of the R&D.

Relevance

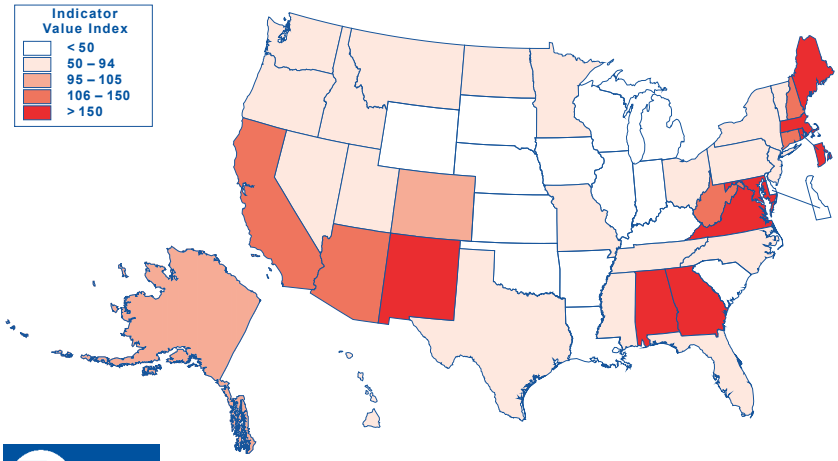
This metric measures the magnitude of federal R&D dollars flowing into a state. These dollars will be used by R&D performers within the state to execute research, development, and demonstration projects. States benefit in two ways from federal R&D obligations. First, the obligations go to support employees, facilities, administrators, and purchases of materials within the state, thus contributing to the state's overall level of economic activity. Second, the obligations go to support research that may lead to wealth creation from new technology, new products, and new businesses in the state. The total federal R&D obligations for the 50 states were $75.3 billion or $7.48 per $1,000 of U.S. gross domestic product (0.7% of GDP). The median federal R&D obligation for the 50 states was $5.24 per $1,000 of GSP.

Federal R&D obligations also reflect on the capabilities and capacities of the research institutions within a state. Many of the federal obligations are awarded on a competitive basis so the level of R&D funding is one indicator of the state's research competitiveness.

Data Considerations and Limitations

Data for this metric were derived from the *Survey of Federal Funds for Research and Development: Fiscal Years 2001, 2002, and 2003* conducted by the National Science Foundation.

Some measurement problems are known to exist in the data. These are related to the fact that some agencies are not able to report the full costs of R&D. Usually this involves a break-out of the headquarters' costs associated with administering R&D programs. R&D plant data are also under-reported to some extent, because of the difficulty that some agencies, particularly the Department of Defense and the National Aeronautics and Space Administration, have in reporting this data. Beginning in fiscal year 2000, the National Aeronautics and Space Administration reclassified Space Station as a physical asset and Space Station Research as equipment, and transferred funding for the program from R&D to R&D plant.



Source of Data

Federal Obligations for R&D: Federal R&D was collected and compiled by the National Science Foundation, Division of Science Resources Statistics <http://www.nsf.gov/sbe/srs/>, Survey of Federal Funds for Research and Development: Fiscal Years 2001, 2002, and 2003. The data will be available online in the report, *Federal Funds for Research and Development: Fiscal Years 2001, 2002, and 2003*, which is expected to be released during the second quarter of 2004.

Gross State Product: U.S. Department of Commerce, Bureau of Economic Analysis. (2003, May). Gross State Product: 2001. <http://www.bea.gov/bea/regional/gsp/> (2003, June 3); Puerto Rico Planning Board, Program of Economic and Social Planning. *Appendix Statistics: Table 1—Selected Series of Income and Product, Total and Per Capita*. <http://www.jp.gobierno.pr>. (2003, October 2).

Federal Obligations for R&D per $1,000 of GSP: 2001

STATE	Federal Obligations for R&D, thousands	GSP, millions	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	$2,333,384	$121,490	$19.21	3	257
Alaska	$212,215	$28,581	$7.43	15	99
Arizona	$1,781,454	$160,687	$11.09	9	148
Arkansas	$183,867	$67,913	$2.71	43	36
California	$12,651,125	$1,359,265	$9.31	10	124
Colorado	$1,340,613	$173,772	$7.71	14	103
Connecticut	$1,377,388	$166,165	$8.29	13	111
Delaware	$70,170	$40,509	$1.73	50	23
Florida	$2,648,421	$491,488	$5.39	25	72
Georgia	$3,395,876	$299,874	$11.32	8	151
Hawaii	$293,122	$43,710	$6.71	17	90
Idaho	$209,344	$36,905	$5.67	23	76
Illinois	$1,693,883	$475,541	$3.56	38	48
Indiana	$534,678	$189,919	$2.82	40	38
Iowa	$324,263	$90,942	$3.57	37	48
Kansas	$306,656	$87,196	$3.52	39	47
Kentucky	$271,690	$120,266	$2.26	46	30
Louisiana	$275,788	$148,697	$1.85	48	25
Maine	$450,735	$37,449	$12.04	6	161
Maryland	$9,290,382	$195,007	$47.64	1	637
Massachusetts	$4,318,139	$287,802	$15.00	5	201
Michigan	$1,175,653	$320,470	$3.67	36	49
Minnesota	$900,936	$188,050	$4.79	28	64
Mississippi	$402,085	$67,125	$5.99	21	80
Missouri	$909,440	$181,493	$5.01	27	67
Montana	$136,825	$22,635	$6.04	20	81
Nebraska	$125,210	$56,967	$2.20	47	29
Nevada	$295,413	$79,220	$3.73	35	50
New Hampshire	$418,645	$47,183	$8.87	11	119
New Jersey	$1,591,939	$365,388	$4.36	30	58
New Mexico	$2,580,734	$55,426	$46.56	2	623
New York	$3,336,229	$826,488	$4.04	33	54
North Carolina	$1,400,937	$275,615	$5.08	26	68
North Dakota	$77,903	$19,005	$4.10	32	55
Ohio	$2,326,954	$373,708	$6.23	19	83
Oklahoma	$225,762	$93,855	$2.41	44	32
Oregon	$522,640	$120,055	$4.35	31	58
Pennsylvania	$2,601,636	$408,373	$6.37	18	85
Rhode Island	$437,455	$36,939	$11.84	7	158
South Carolina	$314,287	$115,204	$2.73	42	36
South Dakota	$54,941	$24,251	$2.27	45	30
Tennessee	$844,743	$182,515	$4.63	29	62
Texas	$2,925,350	$763,874	$3.83	34	51
Utah	$395,097	$70,409	$5.61	24	75
Vermont	$112,704	$19,149	$5.89	22	79
Virginia	$4,809,863	$273,070	$17.61	4	236
Washington	$1,544,597	$222,950	$6.93	16	93
West Virginia	$352,841	$42,368	$8.33	12	111
Wisconsin	$487,948	$177,354	$2.75	41	37
Wyoming	$36,986	$20,418	$1.81	49	24
50 States	**$75,308,946**	**$10,072,735**	**$7.48**	**—**	**100**
Dist of Columbia	$2,605,890	$64,459	$40.43	—	541
Puerto Rico	$90,790	$44,173	$2.06	—	27

[1] (Federal Obligations for R&D / GSP) x $1,000

[2] 100 equals 50-state indicator value

SBIR Awards

Definition

The number of Small Business Innovation Research Program (SBIR) awards per 10,000 business establishments was calculated by averaging the number of SBIR awards made to businesses in each state for the years 2000, 2001, and 2002 and dividing this by the number of business establishments in each state in 2001. Phase 1 and Phase 2 awards were combined for this metric. Total business establishments represent the total number of businesses located at discrete addresses as reported in the *2001 County Business Patterns*. SBIR awards go also to small businesses in the District of Columbia and Puerto Rico.

Relevance

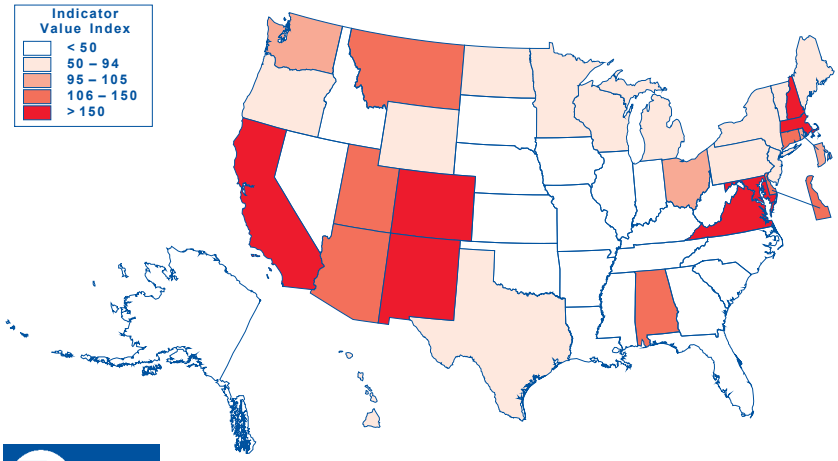
This metric indicates the degree to which small companies in each state are participating in federally funded research and development (R&D) and adding to the United States' base for technical achievement. The SBIR program was initiated in 1982 and is widely recognized as a way to encourage technological innovation within small businesses. The SBIR program funds research to evaluate the feasibility and scientific merit of new technology and to develop the technology so it can be commercialized. Requirements for participation in the program include American ownership of the company, for-profit enterprise, employment of the principal researcher by the company, and fewer than 500 employees.

The total average annual number of SBIR awards granted from 2000–2002 for all 50 states was 4,917 or 6.9 SBIR awards granted per 10,000 business establishments. The median number of SBIR awards granted in the 50 states was 3.8 per 10,000 business establishments. The large difference between the average and median values indicates that these awards are concentrated in relatively few states.

The potential benefits from the SBIR awards are many. First, the federal government may find new suppliers for technologically advanced products thus stimulating the growth of small businesses. Second, small businesses are provided capital with which to invest in new technology that can improve their market position. Third, the technology developed and commercialized as a result of the SBIR awards may lead to the formation of new businesses.

Data Considerations and Limitations

The total SBIR budget dictates how many awards will be given in any year. The SBIR budget fluctuates depending on the agency budgets, making year-to-year comparisons of state award receipt difficult. Also, because of the relatively small number of awards each year, the actual number of awards going to any one state can vary widely on a yearly basis. Using a three-year average helps to smooth out these yearly fluctuations.



Source of Data

SBIR Awards Granted: Small Business Administration. *2000 SBIR State Chart*. <http://www.sba.gov/sbir/indexsbir-sttr-sbir2000chart.html> (2003, October 6); Small Business Administration. *2001 SBIR State Chart*. <http://www.sba.gov/sbir/2001SBIRStateChart.pdf> (2003, October 6); Small Business Administration. *2002 SBIR State Chart*. <http://www.sba.gov/sbir/2002SBIRStateChart.pdf> (2003, November 3).

Establishments: U.S. Census Bureau. *County Business Patterns—United States: 2001*. (2003, April). <http://www.census.gov/prod/2003pubs/01cbp/cbp01-1.pdf> (2003, October 6); U.S. Census Bureau. *County Business Patterns—Puerto Rico: 2001*. (2003, May). <http://www.census.gov/prod/2003pubs/01cbp/cbp01-53.pdf> (2003, October 6).

Technology Administration

Average Annual Number of SBIR Awards per 10,000 Business Establishments: 2000–2002

STATE	Average Annual SBIR Awards	2001 Establishments	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	87	99,261	8.8	10	127
Alaska	3	18,589	1.8	44	26
Arizona	100	116,304	8.6	12	124
Arkansas	8	62,725	1.2	50	18
California	1,004	806,733	12.4	7	179
Colorado	250	139,225	18.0	4	258
Connecticut	85	92,105	9.3	8	133
Delaware	21	24,074	8.7	11	126
Florida	115	434,583	2.7	34	38
Georgia	53	202,505	2.6	35	38
Hawaii	18	30,175	6.1	19	87
Idaho	13	37,622	3.4	30	48
Illinois	76	307,356	2.5	38	35
Indiana	28	145,580	1.9	43	28
Iowa	12	80,392	1.5	48	21
Kansas	18	74,565	2.4	39	35
Kentucky	14	89,501	1.6	46	23
Louisiana	14	100,780	1.4	49	20
Maine	15	39,650	3.8	26	54
Maryland	238	129,301	18.4	3	265
Massachusetts	695	177,434	39.2	1	563
Michigan	87	236,711	3.7	27	53
Minnesota	71	140,968	5.1	23	73
Mississippi	10	59,056	1.7	45	24
Missouri	22	144,071	1.6	47	22
Montana	30	32,294	9.2	9	132
Nebraska	10	49,710	2.0	42	29
Nevada	16	48,863	3.3	31	47
New Hampshire	63	37,312	16.8	5	242
New Jersey	143	234,558	6.1	18	88
New Mexico	86	42,686	20.1	2	290
New York	191	493,863	3.9	25	56
North Carolina	60	204,075	2.9	33	42
North Dakota	7	20,206	3.5	29	50
Ohio	192	269,944	7.1	14	102
Oklahoma	17	85,276	2.0	41	29
Oregon	63	101,003	6.3	17	90
Pennsylvania	174	295,096	5.9	20	85
Rhode Island	20	28,539	7.0	15	101
South Carolina	21	97,030	2.2	40	32
South Dakota	6	24,032	2.5	37	36
Tennessee	42	129,659	3.2	32	46
Texas	192	473,868	4.1	24	58
Utah	49	56,851	8.6	13	123
Vermont	12	21,449	5.8	21	83
Virginia	278	176,532	15.8	6	227
Washington	114	164,072	7.0	16	100
West Virginia	10	40,439	2.6	36	37
Wisconsin	51	140,540	3.7	28	53
Wyoming	10	18,453	5.6	22	81
50 States	**4,917**	**7,075,616**	**6.9**	**—**	**100**
Dist of Columbia	19	19,686	9.8	—	141
Puerto Rico	1	44,372	0.2	—	2

[1] (2000–2002 Average Annual SBIR Awards / 2001 Establishments) x 10,000

[2] 100 equals 50-state indicator value

SBIR Award Dollars

Definition

The average annual dollar award of Small Business Innovation Research Program (SBIR) grants per $1,000 of gross state product (GSP) was calculated by averaging the dollar awards given to companies in each state for the years 2000, 2001, and 2002 and dividing this average by the state's GSP in 2001. Phase 1 and Phase 2 awards dollars were combined to compute this metric. SBIR awards go also to small businesses in the District of Columbia and Puerto Rico. GSP is the value added production by the labor and property located in a state.

Relevance

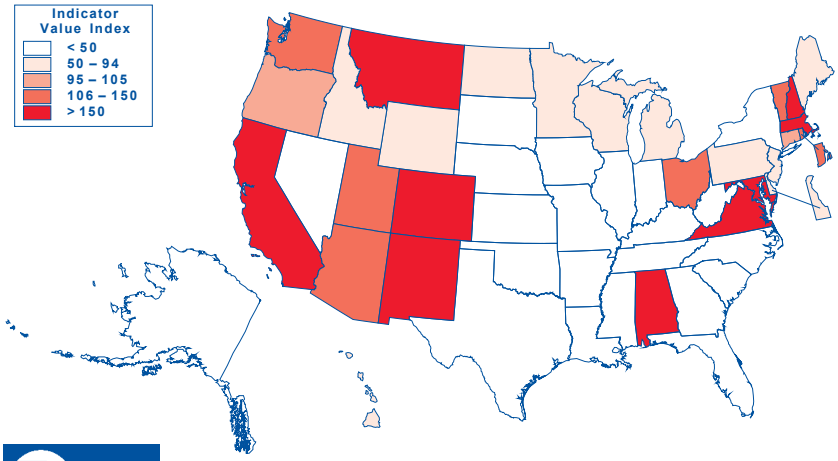
This metric is useful in understanding the magnitude of the federal government's investment in innovative small businesses in each state. The SBIR program, which was started in 1982, is widely recognized as a way to encourage technological innovation within small businesses. The SBIR program funds research to evaluate the feasibility and scientific merit of new technology and to develop the technology to a point where it can be commercialized. Phase 1 awards can be made up to $100,000 for a six-month effort. Phase 2 awards are for $750,000 or less and normally do not exceed a duration of two years.

The total average annual SBIR award dollars granted from 2000-2002 for all 50 states was $1.24 billion or $0.12 per $1,000 of U.S. gross domestic product (GDP). The median SBIR award dollars granted in the 50 states was $0.08 per $1,000 of GSP.

While the absolute dollars represent a small part of GDP, the potential long-term benefits to small businesses and their local economy are much greater. First, small businesses are provided capital which is leveraged with their own investment dollars to develop new technology and products that can improve their market position. Second, the technology developed and commercialized as a result of the SBIR awards may lead to the formation of new businesses or the accelerated growth of existing small businesses. Third, the federal government may find new suppliers for technologically advanced products thus stimulating the growth of small businesses.

Data Considerations and Limitations

The total SBIR budget depends on the extramural R&D budgets of federal agencies. The SBIR budget fluctuates depending on the agency budgets making year-to-year comparisons of state award receipt difficult. Also, because of the relatively small number of awards each year, the dollar value of SBIR awards going to any one state can vary widely on a yearly basis. Using a three-year average helps to smooth out the yearly fluctuations.



Source of Data

SBIR Award Dollars Granted: Small Business Administration. *2000 SBIR State Chart*. <http://www.sba.gov/sbir/indexsbir-sttr-sbir2000chart.html> (2003, October 6); Small Business Administration. *2001 SBIR State Chart*. <http://www.sba.gov/sbir/2001SBIRStateChart.pdf> (2003, October 6); Small Business Administration. *2002 SBIR State Chart*. <http://www.sba.gov/sbir/2002SBIRStateChart.pdf> (2003, November 3).

Gross State Product: U.S. Department of Commerce, Bureau of Economic Analysis. (2003, May). Gross State Product: 2001. <http://www.bea.gov/bea/regional/gsp/> (2003, June 3); Puerto Rico Planning Board, Program of Economic and Social Planning. *Appendix Statistics: Table 1—Selected Series of Income and Product, Total and Per Capita*. <http://www.jp.gobierno.pr>. (2003, October 2).

Technology Administration

Average Annual SBIR Award Dollars per $1,000 of GSP: 2000–2002

STATE	Average Annual SBIR Dollars, thousands	2001 GSP, millions	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	$23,104	$121,490	$0.19	8	155
Alaska	$596	$28,581	$0.02	49	17
Arizona	$25,592	$160,687	$0.16	12	130
Arkansas	$1,704	$67,913	$0.03	48	20
California	$257,670	$1,359,265	$0.19	9	154
Colorado	$61,218	$173,772	$0.35	3	287
Connecticut	$19,668	$166,165	$0.12	17	96
Delaware	$4,613	$40,509	$0.11	18	93
Florida	$26,658	$491,488	$0.05	35	44
Georgia	$12,400	$299,874	$0.04	39	34
Hawaii	$3,770	$43,710	$0.09	24	70
Idaho	$2,396	$36,905	$0.06	27	53
Illinois	$18,197	$475,541	$0.04	41	31
Indiana	$6,018	$189,919	$0.03	44	26
Iowa	$2,858	$90,942	$0.03	45	26
Kansas	$3,730	$87,196	$0.04	38	35
Kentucky	$3,156	$120,266	$0.03	47	21
Louisiana	$2,796	$148,697	$0.02	50	15
Maine	$2,961	$37,449	$0.08	25	64
Maryland	$61,613	$195,007	$0.32	5	257
Massachusetts	$182,278	$287,802	$0.63	1	515
Michigan	$20,591	$320,470	$0.06	28	52
Minnesota	$18,862	$188,050	$0.10	22	82
Mississippi	$2,511	$67,125	$0.04	42	30
Missouri	$4,944	$181,493	$0.03	46	22
Montana	$6,740	$22,635	$0.30	6	242
Nebraska	$2,276	$56,967	$0.04	40	33
Nevada	$4,598	$79,220	$0.06	31	47
New Hampshire	$15,472	$47,183	$0.33	4	267
New Jersey	$36,895	$365,388	$0.10	21	82
New Mexico	$20,009	$55,426	$0.36	2	294
New York	$47,767	$826,488	$0.06	32	47
North Carolina	$15,997	$275,615	$0.06	30	47
North Dakota	$1,657	$19,005	$0.09	23	71
Ohio	$51,650	$373,708	$0.14	14	112
Oklahoma	$3,494	$93,855	$0.04	43	30
Oregon	$15,107	$120,055	$0.13	16	102
Pennsylvania	$43,225	$408,373	$0.11	20	86
Rhode Island	$4,819	$36,939	$0.13	15	106
South Carolina	$5,096	$115,204	$0.04	37	36
South Dakota	$1,184	$24,251	$0.05	36	40
Tennessee	$10,202	$182,515	$0.06	33	45
Texas	$45,016	$763,874	$0.06	29	48
Utah	$11,355	$70,409	$0.16	11	131
Vermont	$3,157	$19,149	$0.16	10	134
Virginia	$73,708	$273,070	$0.27	7	220
Washington	$31,145	$222,950	$0.14	13	114
West Virginia	$2,358	$42,368	$0.06	34	45
Wisconsin	$12,710	$177,354	$0.07	26	58
Wyoming	$2,261	$20,418	$0.11	19	90
50 States	**$1,237,802**	**$10,072,735**	**$0.12**	**—**	**100**
Dist of Columbia	$5,069	$64,459	$0.08	—	64
Puerto Rico	$219	$44,173	$0.00	—	4

[1] (2000–2002 Average Annual SBIR Dollars / 2001 GSP) x $1,000

[2] 100 equals 50-state indicator value

STTR Awards

Definition

The number of Small Business Technology Transfer Program (STTR) awards per 10,000 business establishments was calculated by averaging the number of STTR awards in each state for the years 2000, 2001, and 2002 and dividing this by the number of business establishments in each state in 2001, the middle year of the three-year period. STTR awards are given to partnerships of small businesses and non-profit research institutions. Phase 1 and Phase 2 awards were combined to compute this metric. STTR awards are also granted to small businesses in the District of Columbia. Total business establishments are the total number of businesses as reported in the *2001 County Business Patterns*.

Relevance

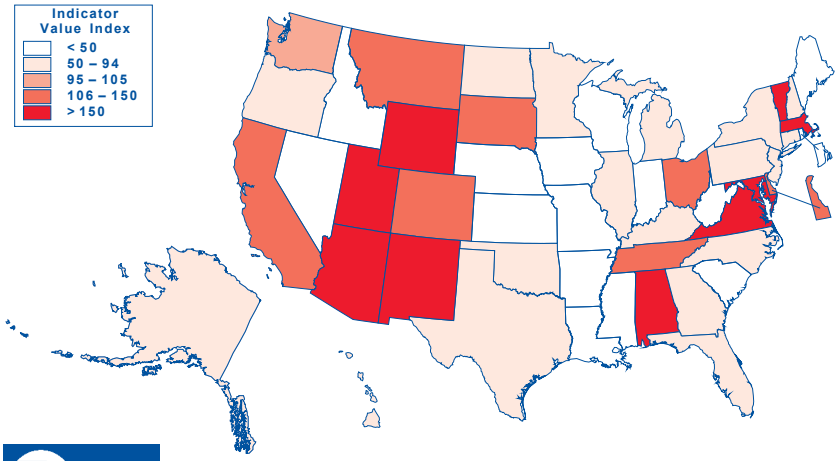
This metric indicates the degree to which partnerships of small companies and non-profit research institutions in each state are participating in federally funded research and development (R&D) and adding to the United States' base for creating technical innovation. The STTR program was started in 1992 for U.S. companies that have fewer than 500 employees and are operated on a for-profit basis. The program is widely recognized as a way to encourage technological innovation within small businesses and for building strategic linkages between businesses and research institutions. The STTR program funds research to evaluate the feasibility and scientific merit of new technology and to develop the technology to a point where it can be commercialized. It shares the philosophy of the Small Business Innovation Research (SBIR) Program but differs because it requires a partnership between small business and selected federal and non-profit research institutions.

The total average annual number of STTR awards granted from 2000–2002 for the 50 states was 368 or 0.52 STTR awards granted per 10,000 business establishments. The median number of STTR awards granted in the 50 states was 0.39 per 10,000 business establishments. The STTR program provides less than one-tenth the number of SBIR awards in a given year.

The potential benefits from the STTR awards are many. First, the STTR program helps form strong technical relationships between small businesses and research institutions that can last beyond the performance of the specific grant. Second, small businesses receive capital to invest in new technology that can improve their market position. Third, the federal government may find new suppliers for technologically advanced products thus stimulating the growth of small businesses.

Data Considerations and Limitations

The total STTR budget dictates how many awards will be given in any year. The STTR budget fluctuates depending on the level of the R&D budgets of participating federal agencies thus making year-to-year comparisons of state awards difficult. Also, because of the relatively small number of awards each year, the actual number of awards going to any one state can vary widely on an annual basis. Using a three-year average helps to smooth out the yearly fluctuations.



Source of Data

STTR Awards Granted: Small Business Administration. *2000 STTR State Chart*. <http://www.sba.gov/sbir/indexsbir-sttr-sttr00chart.html> (2003, October 6); Small Business Administration. *2001 STTR State Chart*. <http://www.sba.gov/sbir/2001STTRStateChart.pdf> (2003, October 6); Small Business Administration. *2002 STTR State Chart*. <http://www.sba.gov/sbir/FY2002STTRStateChart.pdf> (2003, October 6).

Establishments: U.S. Census Bureau. *County Business Patterns—United States: 2001*. (2003, April). <http://www.census.gov/prod/2003pubs/01cbp/cbp01-1.pdf> (2003, October 6); U.S. Census Bureau. *County Business Patterns—Puerto Rico: 2001*. (2003, May). <http://www.census.gov/prod/2003pubs/01cbp/cbp01-53.pdf> (2003, October 6).

Technology Administration

Average Annual Number of STTR Awards per 10,000 Business Establishments: 2000–2002

STATE	Average Annual STTR Awards	2001 Establishments	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	8.0	99,261	0.81	9	155
Alaska	0.7	18,589	0.36	28	69
Arizona	10.3	116,304	0.89	7	171
Arkansas	1.3	62,725	0.21	40	41
California	53.0	806,733	0.66	12	126
Colorado	10.3	139,225	0.74	10	143
Connecticut	4.0	92,105	0.43	21	84
Delaware	1.3	24,074	0.55	16	107
Florida	14.3	434,583	0.33	33	63
Georgia	6.7	202,505	0.33	34	63
Hawaii	1.3	30,175	0.44	20	85
Idaho	0.3	37,622	0.09	46	17
Illinois	11.0	307,356	0.36	29	69
Indiana	2.3	145,580	0.16	43	31
Iowa	0.7	80,392	0.08	47	16
Kansas	1.0	74,565	0.13	45	26
Kentucky	3.0	89,501	0.34	30	65
Louisiana	0.3	100,780	0.03	50	6
Maine	0.7	39,650	0.17	41	32
Maryland	12.3	129,301	0.95	5	184
Massachusetts	41.3	177,434	2.33	1	448
Michigan	9.0	236,711	0.38	26	73
Minnesota	5.7	140,968	0.40	24	77
Mississippi	0.3	59,056	0.06	49	11
Missouri	3.7	144,071	0.25	36	49
Montana	2.0	32,294	0.62	13	119
Nebraska	0.3	49,710	0.07	48	13
Nevada	0.7	48,863	0.14	44	26
New Hampshire	1.7	37,312	0.45	19	86
New Jersey	11.0	234,558	0.47	18	90
New Mexico	6.3	42,686	1.48	3	286
New York	18.0	493,863	0.36	27	70
North Carolina	8.7	204,075	0.42	22	82
North Dakota	0.7	20,206	0.33	32	63
Ohio	18.0	269,944	0.67	11	128
Oklahoma	3.3	85,276	0.39	25	75
Oregon	3.3	101,003	0.33	31	64
Pennsylvania	12.3	295,096	0.42	23	80
Rhode Island	0.7	28,539	0.23	38	45
South Carolina	2.3	97,030	0.24	37	46
South Dakota	1.3	24,032	0.55	15	107
Tennessee	7.7	129,659	0.59	14	114
Texas	14.0	473,868	0.30	35	57
Utah	4.7	56,851	0.82	8	158
Vermont	2.0	21,449	0.93	6	179
Virginia	30.7	176,532	1.74	2	334
Washington	8.7	164,072	0.53	17	102
West Virginia	0.7	40,439	0.16	42	32
Wisconsin	3.0	140,540	0.21	39	41
Wyoming	2.7	18,453	1.45	4	278
50 States	**367.7**	**7,075,616**	**0.52**	**—**	**100**
Dist of Columbia	1.0	19,686	0.51	—	98
Puerto Rico	0.7	44,372	0.15	—	29

[1] (2000–2002 Average Annual STTR Awards / 2001 Establishments) x 10,000

[2] 100 equals 50-state indicator value

STTR Award Dollars

Definition

The average annual dollar award of Small Business Technology Transfer Program (STTR) grants per $1,000 of gross state product (GSP) was calculated by averaging the dollar awards over the three-year period of 2000–2002 and dividing this average by the state's GSP in 2001. STTR awards are given to partnerships of small businesses and non-profit research institutions. Phase 1 and Phase 2 awards dollars were combined to compute this metric. STTR awards go also to small businesses in the District of Columbia. GSP is the value added production by the labor and property located in a state.

Relevance

This metric is useful in understanding the magnitude of federal investment in research partnerships between small businesses and non-profit research institutions. The STTR program was authorized in 1992 for U.S. companies that have fewer than 500 employees and are operated on a for-profit basis. The program is widely recognized as a way to encourage technological innovation within small businesses and to build strategic linkages between businesses and research institutions.

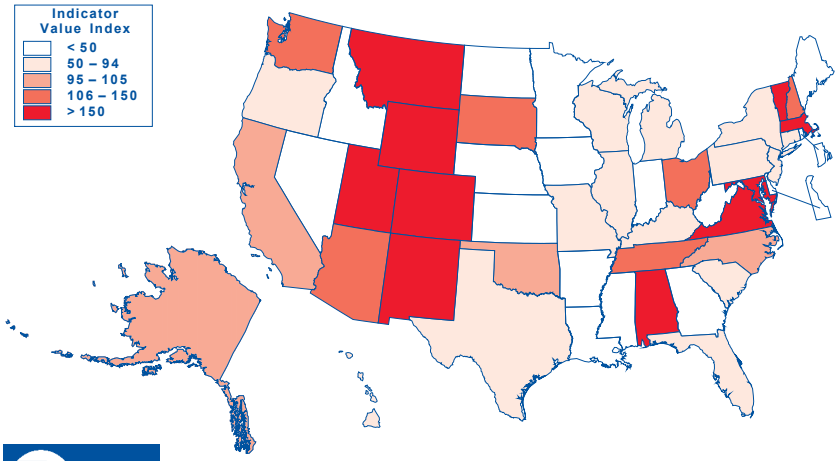
Each year, five federal departments are required to reserve a portion of their research and development (R&D) funds to award to small business/non-profit research institution partnerships. They include the Department of Defense, the Department of Energy, the Department of Health and Human Services, the National Aeronautics and Space Administration, and the National Science Foundation. Phase 1 awards of up to $100,000 cover approximately one year's exploration of the scientific, technical, and commercial feasibility of an idea or technology. Phase 2 awards can range up to $500,000 for two years to expand the Phase 1 results. The U.S. Small Business Administration is the coordinating agency for the STTR program.

The total average annual STTR award dollars granted from 2000-2002 for the 50 states was $74 million or $0.007 per $1,000 of U.S. gross domestic product (GDP). The median STTR award dollars granted in the 50 states was $0.006 per $1,000 of GSP. The STTR program awards less than one-tenth the dollar amount awarded through the SBIR program.

While the absolute dollars are a small part of GDP, the potential long-term benefits to small businesses and their local economy are much greater. First, small businesses are required to develop a strategic partnership with a federal research facility or non-profit research center. Second, small businesses are provided capital which is leveraged with their own investment dollars to develop new technology and products that can improve their market position. Third, the technology developed and commercialized as a result of the STTR awards may lead to the formation of new businesses or the accelerated growth of existing small businesses. Fourth, the federal government may find new suppliers for technologically advanced products thus stimulating the growth of small businesses.

Data Considerations and Limitations

The total STTR budget depends on the extramural R&D budgets of selected federal agencies. The STTR budget fluctuates depending on the agency budgets making year-to-year comparisons of state award receipt difficult. Also, because of the relatively small number of awards each year, the dollar value of STTR awards going to any one state can vary widely on an annual basis. Using a three-year average helps to smooth out the yearly fluctuations.



Source of Data

STTR Award Dollars Granted: Small Business Administration. *2000 STTR State Chart*. <http://www.sba.gov/sbir/indexsbir-sttr-sttr00chart.html> (2003, October 6); Small Business Administration. *2001 STTR State Chart*. <http://www.sba.gov/sbir/2001STTRStateChart.pdf> (2003, October 6); Small Business Administration. *2002 STTR State Chart*. <http://www.sba.gov/sbir/FY2002STTRStateChart.pdf> (2003, October 6).

Gross State Product: U.S. Department of Commerce, Bureau of Economic Analysis. (2003, May). Gross State Product: 2001. <http://www.bea.gov/bea/regional/gsp/> (2003, June 3); Puerto Rico Planning Board, Program of Economic and Social Planning. *Appendix Statistics: Table 1—Selected Series of Income and Product, Total and Per Capita*. <http://www.jp.gobierno.pr>. (2003, October 2).

Average Annual STTR Award Dollars per $1,000 of GSP: 2000–2002

STATE	Average Annual STTR Dollars, thousands	2001 GSP, millions	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	$1,948	$121,490	$0.016	7	219
Alaska	$200	$28,581	$0.007	20	96
Arizona	$1,723	$160,687	$0.011	11	146
Arkansas	$204	$67,913	$0.003	39	41
California	$9,688	$1,359,265	$0.007	18	97
Colorado	$2,436	$173,772	$0.014	9	191
Connecticut	$686	$166,165	$0.004	31	56
Delaware	$123	$40,509	$0.003	38	41
Florida	$2,898	$491,488	$0.006	25	81
Georgia	$873	$299,874	$0.003	40	40
Hawaii	$267	$43,710	$0.006	23	83
Idaho	$33	$36,905	$0.001	47	12
Illinois	$2,196	$475,541	$0.005	28	63
Indiana	$501	$189,919	$0.003	42	36
Iowa	$201	$90,942	$0.002	43	30
Kansas	$253	$87,196	$0.003	41	40
Kentucky	$498	$120,266	$0.004	30	57
Louisiana	$33	$148,697	$0.000	50	3
Maine	$67	$37,449	$0.002	44	24
Maryland	$2,724	$195,007	$0.014	10	191
Massachusetts	$8,823	$287,802	$0.031	1	419
Michigan	$1,781	$320,470	$0.006	26	76
Minnesota	$676	$188,050	$0.004	35	49
Mississippi	$23	$67,125	$0.000	49	5
Missouri	$727	$181,493	$0.004	32	55
Montana	$368	$22,635	$0.016	6	222
Nebraska	$66	$56,967	$0.001	46	16
Nevada	$66	$79,220	$0.001	48	11
New Hampshire	$450	$47,183	$0.010	14	130
New Jersey	$2,184	$365,388	$0.006	24	82
New Mexico	$1,136	$55,426	$0.020	5	280
New York	$3,592	$826,488	$0.004	29	59
North Carolina	$1,943	$275,615	$0.007	19	96
North Dakota	$66	$19,005	$0.003	36	48
Ohio	$3,622	$373,708	$0.010	13	132
Oklahoma	$680	$93,855	$0.007	17	99
Oregon	$791	$120,055	$0.007	21	90
Pennsylvania	$2,647	$408,373	$0.006	22	89
Rhode Island	$115	$36,939	$0.003	37	43
South Carolina	$584	$115,204	$0.005	27	69
South Dakota	$229	$24,251	$0.009	15	129
Tennessee	$1,802	$182,515	$0.010	12	135
Texas	$2,919	$763,874	$0.004	33	52
Utah	$1,016	$70,409	$0.014	8	197
Vermont	$394	$19,149	$0.021	4	281
Virginia	$6,365	$273,070	$0.023	3	318
Washington	$1,919	$222,950	$0.009	16	118
West Virginia	$56	$42,368	$0.001	45	18
Wisconsin	$677	$177,354	$0.004	34	52
Wyoming	$493	$20,418	$0.024	2	330
50 States	**$73,763**	**$10,072,735**	**$0.007**	**—**	**100**
Dist of Columbia	$291	$64,459	$0.005	—	62
Puerto Rico	$200	$44,173	$0.005	—	62

[1] (2000–2002 Average Annual STTR Dollars / 2001 GSP) x $1,000

[2] 100 equals 50-state indicator value

Mathematics Test Scores

Definition

The National Assessment of Educational Progress (NAEP) is a nationally representative, continuing assessment of what students know in the areas of reading, mathematics, science, writing, history/geography, and other fields. This indicator focuses on that portion of the NAEP assessment that measures mathematical skills at the eighth grade level. The mathematical assessment contains questions that deal with number sense, properties, and operations; measurement; geometry and spatial sense; data analysis, statistics, and probability; and algebra and functions.

Relevance

This metric provides an early indicator of mathematical achievement in the labor force of the future. The score for the assessment measures the performance of public school students in the eighth grade, both on a national and a state-by-state basis.

The scale for this assessment ranges from 0–500 points. The National Assessment Governing Board has adopted three performance levels: *Basic*, *Proficient*, and *Advanced*. The *Basic* level (262–298) indicates that the student has achieved partial mastery of the knowledge and skills that are fundamental for proficient work in mathematics at the eighth grade level. The *Proficient* level (299–332) is the level that all students are expected to reach. It represents solid academic performance and demonstrates that the student is competent in handling challenging subject matter, including subject matter knowledge, application of such knowledge to real-world situations, and appropriate analytical skills. The *Advanced* level (333–500) signifies superior performance.

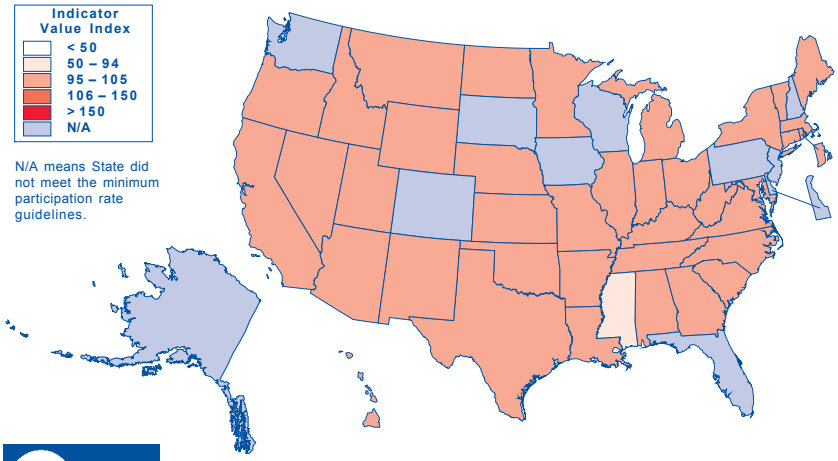
In the eighth grade mathematics assessment, the national average scores for public schools showed continuous improvement during the last decade, rising from 261 in 1990, to 266 in 1992, to 270 in 1996 and finally to 274 in 2000. The median state test score for the 39 participating states reporting results was 276. In 2000, the nationwide percentage of eighth-grade students performing at or above *Proficient* was 27 percent.

Data Considerations and Limitations

The eighth grade NAEP 2000 mathematics assessment produced both national and state level results from different groups of students. The national assessment included 9,389 students from 374 public schools. Approximately 100,000 students participated in the state assessments. While the size of individual state samples may vary, it is on the order of 2,500 eighth graders from 100 public schools in each state.

In 2000, thirty-nine states participated in the eighth grade state assessment program in mathematics. States which failed to meet one or more participation rate guidelines but for which scores are reported include: Arizona, California, Idaho, Illinois, Indiana, Kansas, Maine, Michigan, Minnesota, Montana, New York, Oregon, and Vermont. Wisconsin failed to meet the minimum school participation rate of 70 percent, so its scores are not reported. States that did not participate in the 2000 assessment include: Colorado, Delaware, Florida, Iowa, New Hampshire, New Jersey, Pennsylvania, South Dakota, and Washington.

It should be noted that this metric differs from a similar one contained in the first through third editions of this publication which dealt with eighth grade performance in the subject of science. Since neither the math nor the science assessment is administered annually, coverage is being rotated between these two subject areas to provide the reader with a broader overview of early science and mathematics achievement.



Source of Data

NAEP Math Test Scores: U.S. Department of Education, National Center for Education Statistics. (2001, August). *The Nation's Report Card: Mathematics 2000*, NCES 2001-517, by J.S. Braswell, et. al. <http://www.nces.ed.gov/nationsreportcard/mathematics/> (2002, December 30).

Technology Administration

National Assessment of Educational Progress (NAEP) in Mathematics Average State Test Scores: 2000

STATE	INDICATOR VALUE	Rank	Indicator Value Index [1]
Alabama	262	34	96
Alaska	N/A	—	—
Arizona	271	27	99
Arkansas	261	36	95
California	262	34	96
Colorado	N/A	—	—
Connecticut	282	10	103
Delaware	N/A	—	—
Florida	N/A	—	—
Georgia	266	30	97
Hawaii	263	32	96
Idaho	278	14	101
Illinois	277	16	101
Indiana	283	5	103
Iowa	N/A	—	—
Kansas	284	3	104
Kentucky	272	25	99
Louisiana	259	38	95
Maine	284	3	104
Maryland	276	19	101
Massachusetts	283	5	103
Michigan	278	14	101
Minnesota	288	1	105
Mississippi	254	39	93
Missouri	274	23	100
Montana	287	2	105
Nebraska	281	11	103
Nevada	268	29	98
New Hampshire	N/A	—	—
New Jersey	N/A	—	—
New Mexico	260	37	95
New York	276	19	101
North Carolina	280	13	102
North Dakota	283	5	103
Ohio	283	5	103
Oklahoma	272	25	99
Oregon	281	11	103
Pennsylvania	N/A	—	—
Rhode Island	273	24	100
South Carolina	266	30	97
South Dakota	N/A	—	—
Tennessee	263	32	96
Texas	275	21	100
Utah	275	21	100
Vermont	283	5	103
Virginia	277	16	101
Washington	N/A	—	—
West Virginia	271	27	99
Wisconsin	N/A	—	—
Wyoming	277	16	101
United States [2]	**274**	—	**100**
Dist of Columbia	234	—	85
Puerto Rico	N/A	—	—

[1] 100 equals United States indicator value

[2] Includes the 50 states, District of Columbia, and Department of Defense schools

High School Completion

Definition

This metric represents an estimate of the percentage of a state's non-institutional population aged 25 and older that has completed high school. The estimate was based on the March 2002 Supplement to the 2002 Current Population Survey (CPS). The CPS is a monthly interview-based survey conducted by the U.S. Census Bureau, and the supplement contains additional questions asked annually in March about money income received in the previous calendar year, educational attainment, household and family characteristics, marital status, and geographical mobility.

Relevance

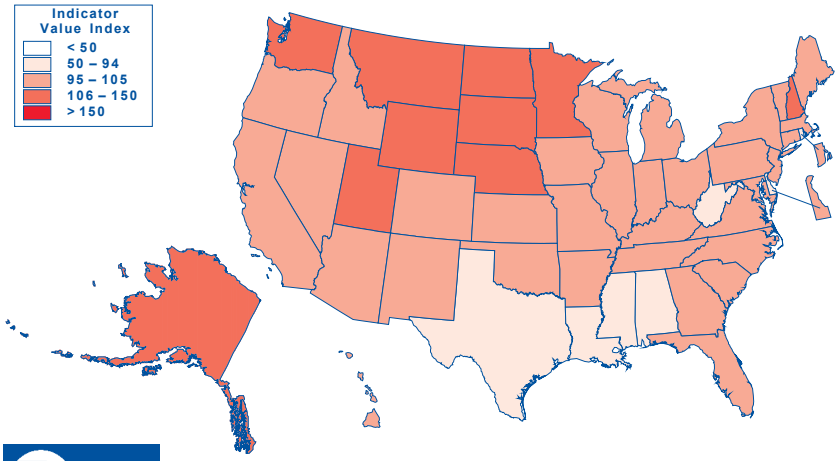
High school completion, either through graduation or by successfully passing the general equivalency examination, is the first major educational milestone that is not mandated by law. Attaining this milestone represents a choice made by the student that affects both his/her own destiny and that of the wider community. The amount of education an individual has directly correlates with earnings potential. A better-educated work force impacts the state's ability to grow established businesses and to attract new ones.

High school completion rates represent the first level of outcomes through which state educational systems can be compared. Graduation rates depend not only on teachers, classrooms, and buildings, but also on the emphasis that parents and the community place on education and on their willingness to provide alternative routes to meet the goal of high school completion.

Nationwide, 84.1% of all adults ages 25 and over have completed high school, but state high school completion rates vary from a low of 78.1% to a high of 92.2% with a median value of 86.6%. The states with the highest concentrations of high school graduates were Alaska, Minnesota, and Wyoming. Nationally, the high school completion level of young adults (ages 25 to 29) was 86.4%, while 89.3% of the employed civilian labor force between the ages of 18 and 64 had a high school diploma.

Data Considerations and Limitations

The data used for this metric represent estimates based on a sample survey and are subject to sample variability. The survey uses an estimation procedure that adjusts weighted sample results to agree with independent estimates of the civilian non-institutional population of the U.S. by age, sex, race, Hispanic/non-Hispanic origin, and state of residence. However, estimates for small states or sparsely populated states may be less accurate.



Source of Data

High School Completion: U.S. Census Bureau. (2003, March 21). *Educational Attainment of the Population 25 Years and Over, By State, Including Confidence Intervals of Estimates: March 2002*. <http://www.census.gov/population/socdemo/education/ppl-169/tab13.pdf> (2003, June 3).

Technology Administration

Percent of the Population that has Completed High School: 2002

STATE	INDICATOR VALUE	Rank	Indicator Value Index [1]
Alabama	78.9%	47	94
Alaska	92.2%	1	110
Arizona	84.6%	34	101
Arkansas	81.0%	39	96
California	80.2%	41	95
Colorado	87.6%	17	104
Connecticut	88.0%	14	105
Delaware	88.5%	11	105
Florida	83.3%	36	99
Georgia	82.9%	37	99
Hawaii	87.9%	15	105
Idaho	86.8%	23	103
Illinois	85.9%	29	102
Indiana	85.3%	32	101
Iowa	88.3%	12	105
Kansas	87.5%	18	104
Kentucky	80.8%	40	96
Louisiana	78.8%	48	94
Maine	87.4%	20	104
Maryland	87.5%	18	104
Massachusetts	86.5%	26	103
Michigan	86.5%	26	103
Minnesota	92.2%	1	110
Mississippi	79.1%	46	94
Missouri	88.1%	13	105
Montana	89.7%	8	107
Nebraska	89.8%	7	107
Nevada	85.8%	31	102
New Hampshire	90.2%	6	107
New Jersey	85.9%	29	102
New Mexico	81.6%	38	97
New York	83.7%	35	100
North Carolina	80.1%	43	95
North Dakota	89.0%	10	106
Ohio	87.3%	22	104
Oklahoma	85.1%	33	101
Oregon	87.7%	16	104
Pennsylvania	86.1%	28	102
Rhode Island	80.1%	43	95
South Carolina	80.2%	41	95
South Dakota	89.2%	9	106
Tennessee	80.1%	43	95
Texas	78.1%	50	93
Utah	91.0%	4	108
Vermont	87.4%	20	104
Virginia	86.7%	25	103
Washington	90.4%	5	107
West Virginia	78.5%	49	93
Wisconsin	86.8%	23	103
Wyoming	91.6%	3	109
United States [2]	**84.1%**	**—**	**100**
Dist of Columbia	83.5%	—	99
Puerto Rico	N/A	—	—

[1] 100 equals United States indicator value

[2] Includes the 50 states and the District of Columbia

Percent with a Bachelor's Degree

Definition

The percent of the population with a bachelor's degree provides another measure of the educational attainment of a state. The data for this metric represent estimates made from the responses to the March 2002 Supplement to the Current Population Survey (CPS). The CPS is an interview-based survey conducted jointly by the U.S. Census Bureau and the U.S. Bureau of Labor Statistics. Only individuals aged 25 and older are included in this metric.

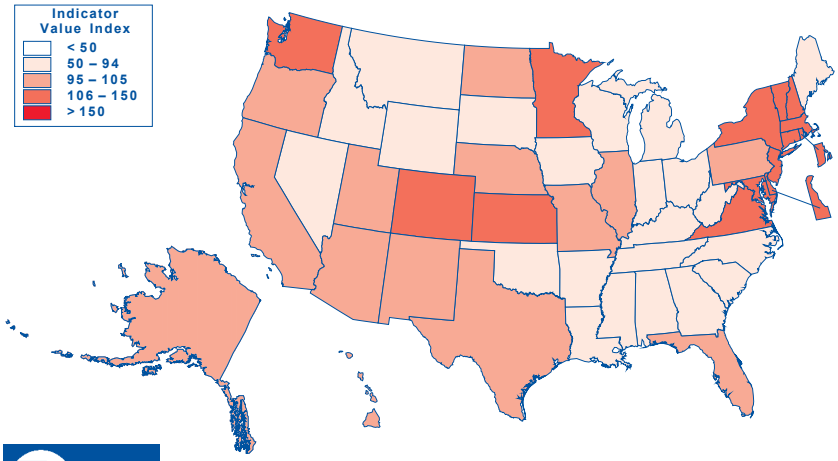
Relevance

The percent of the population that holds a bachelor's degree or higher provides an indication of the state's ability to attract and retain college-educated individuals. It is an indicator of post-graduation migration trends among this segment of the population and is not directly correlated with a state's educational capacity. A state's educational capacity is better described through metrics involving the number of degrees granted by educational institutions within the state. This metric does not consider where individuals received their degrees; it focuses solely on where they have chosen to live. States with a well-educated work force are better positioned to develop and produce technology-intensive products and services.

In 2002, nearly 27% of the population of the 50 states held a bachelor's degree or higher. The percent of bachelor's degrees in the population of individual states ranged from 16% to nearly 38% with a median value of 25.7%. The states with the highest concentrations of college graduates were Maryland, Colorado, and Virginia.

Data Considerations and Limitations

A total of 60,000 households are surveyed monthly to provide data for the CPS. The CPS is focused on the employment status of the working age population and the demographic characteristics of the work force. CPS data aggregated at the state level are subject to sample variability, particularly the estimates for small or sparsely populated states.



Source of Data

Population with Bachelor's Degrees: U.S. Census Bureau. (2003, March 21). *Educational Attainment of the Population 25 Years and Over, By State, Including Confidence Intervals of Estimates: March 2002*. <http://www.census.gov/population/socdemo/education/ppl-169/tab13.pdf> (2003, June 3).

Technology Administration

Percent of the Population with a Bachelor's Degree: 2002

STATE	INDICATOR VALUE	Rank	Indicator Value Index [1]
Alabama	22.7%	38	85
Alaska	25.6%	26	96
Arizona	26.3%	22	99
Arkansas	18.3%	49	69
California	27.9%	15	104
Colorado	35.7%	2	134
Connecticut	32.6%	5	122
Delaware	29.5%	11	110
Florida	25.7%	25	96
Georgia	25.0%	29	94
Hawaii	26.8%	19	100
Idaho	20.9%	45	78
Illinois	27.3%	16	102
Indiana	23.7%	33	89
Iowa	23.1%	37	87
Kansas	29.1%	12	109
Kentucky	21.6%	43	81
Louisiana	22.1%	41	83
Maine	23.8%	32	89
Maryland	37.6%	1	141
Massachusetts	34.3%	4	128
Michigan	22.5%	39	84
Minnesota	30.5%	8	114
Mississippi	20.9%	45	78
Missouri	26.7%	21	100
Montana	23.6%	34	88
Nebraska	27.1%	17	102
Nevada	22.1%	41	83
New Hampshire	30.1%	9	113
New Jersey	31.4%	6	118
New Mexico	25.4%	27	95
New York	28.8%	13	108
North Carolina	22.4%	40	84
North Dakota	25.3%	28	95
Ohio	24.5%	31	92
Oklahoma	20.4%	47	76
Oregon	27.1%	17	102
Pennsylvania	26.1%	24	98
Rhode Island	30.1%	9	113
South Carolina	23.3%	36	87
South Dakota	23.6%	34	88
Tennessee	21.5%	44	81
Texas	26.2%	23	98
Utah	26.8%	19	100
Vermont	30.8%	7	115
Virginia	34.6%	3	130
Washington	28.3%	14	106
West Virginia	15.9%	50	60
Wisconsin	24.7%	30	93
Wyoming	19.6%	48	73
United States [2]	**26.7%**	**—**	**100**
Dist of Columbia	44.4%	—	166
Puerto Rico	N/A	—	—

[1] 100 equals United States indicator value

[2] Includes the 50 states and the District of Columbia

Associate's Degrees Granted

Definition

The number of associate's degrees conferred by Title IV-eligible, degree-granting institutions in the 2000–2001 academic year was segmented by state and divided by the population of 18–24 year olds in each state. The 18–24 year old segment of the population was selected because it is the age division that corresponds most closely to the population of individuals who were the most likely candidates for an associate's degree. In this way, the number of associate's degrees granted by individual states can be compared. In addition to reporting the number of degrees awarded relative to the size of the potential student population, this method of normalization also removed any differences in the age distribution of the population in different states. This was particularly important for those states having a high percentage of retirees.

Relevance

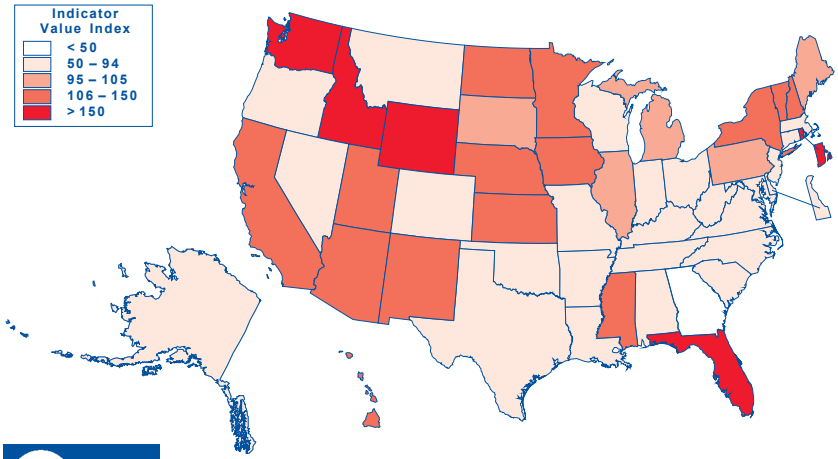
Obtaining an associate's degree is a step in the educational ladder beyond the high school diploma. Some students who are awarded an associate's degree will continue with their education to the bachelor's level, but many will not. Since approximately twice as many bachelor's degrees are awarded each year as are associate's degrees, many bachelor's degree holders do not receive an associate's degree.

During the 2000–2001 academic year, 24% of the almost 2.4 million degrees awarded were associate's degrees. The total number of associate's degrees granted in the 50 states was 578,206. That was equivalent to 2.08% of the 18–24 year old population. The median equivalent percentage of associate's degrees granted in the 50 states was 1.91% of the 18–24 year old population.

Data Considerations and Limitations

Data on the number of associate's degrees awarded were provided by state coordinators for the Integrated Postsecondary Education Data System (IPEDS) or by officials at individual institutions. The IPEDS Fall 2001 data collection provided information on the completions for the period July 1, 2000 through June 30, 2001. These data were collected using a web-based IPEDS data collection system. A total of 4,197 degree-granting institutions located in the United States provided data for the IPEDS collection.

The number of degrees awarded represents only the overall number of degrees awarded by institutions within a state. Degree recipients may include residents, out-of-state students, and foreign students. Data related to the degrees awarded by foreign institutions are not available by U.S. state of residence.



Source of Data

Associate's Degrees Granted: U.S. Department of Education, National Center for Education Statistics. (2003, June). *Digest of Education Statistics 2002*, NCES 2003-060, by Thomas D. Snyder, et.al. <http://www.nces.ed.gov/pubs2003/digest02/> (2003, June 24).

Population, 18–24 Years Old: U.S. Census Bureau, Population Division. State Estimates by Demographic Characteristics—Single Year of Age, Sex, Race, and Hispanic Origin. <http://eire.census.gov/popest/data/states/files/STCH-6R.txt> (2003, October 31); The 2001 population 18–24 years old for the Commonwealth of Puerto Rico was provided by the Population Division of the U.S. Census Bureau on October 8, 2003 per a special request from Taratec Corporation, Columbus, Ohio.

Technology Administration

Associate's Degrees Granted as a Percent of the 18–24 Year Old Population: 2000–2001

STATE	Associate's Degrees Granted	2001 Population 18–24 Years of Age	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	8,140	446,348	1.82%	28	88
Alaska	961	61,957	1.55%	42	75
Arizona	13,334	525,415	2.54%	14	122
Arkansas	4,014	267,275	1.50%	44	72
California	79,468	3,467,051	2.29%	16	110
Colorado	7,982	438,886	1.82%	29	87
Connecticut	4,257	279,450	1.52%	43	73
Delaware	1,097	78,747	1.39%	47	67
Florida	50,049	1,382,179	3.62%	2	174
Georgia	8,173	853,685	0.96%	50	46
Hawaii	3,315	118,429	2.80%	8	134
Idaho	5,016	145,008	3.46%	3	166
Illinois	25,931	1,221,520	2.12%	21	102
Indiana	10,849	623,200	1.74%	34	84
Iowa	9,387	308,490	3.04%	6	146
Kansas	7,294	284,723	2.56%	13	123
Kentucky	6,560	412,425	1.59%	40	76
Louisiana	6,817	485,241	1.40%	45	67
Maine	2,197	111,619	1.97%	24	95
Maryland	7,431	469,101	1.58%	41	76
Massachusetts	10,372	588,812	1.76%	31	85
Michigan	19,534	956,545	2.04%	23	98
Minnesota	10,898	491,611	2.22%	19	107
Mississippi	7,158	318,762	2.25%	17	108
Missouri	10,671	554,288	1.93%	25	92
Montana	1,471	90,564	1.62%	39	78
Nebraska	3,988	179,886	2.22%	18	107
Nevada	2,164	183,978	1.18%	49	57
New Hampshire	2,975	110,720	2.69%	10	129
New Jersey	11,774	691,195	1.70%	35	82
New Mexico	4,806	184,606	2.60%	12	125
New York	51,605	1,788,520	2.89%	7	139
North Carolina	14,264	810,199	1.76%	32	85
North Dakota	2,044	75,518	2.71%	9	130
Ohio	19,289	1,080,487	1.79%	30	86
Oklahoma	7,002	369,182	1.90%	26	91
Oregon	6,312	333,057	1.90%	27	91
Pennsylvania	23,295	1,131,352	2.06%	22	99
Rhode Island	3,582	110,760	3.23%	4	155
South Carolina	6,938	420,990	1.65%	37	79
South Dakota	1,754	81,538	2.15%	20	103
Tennessee	7,584	556,265	1.36%	48	66
Texas	31,560	2,258,949	1.40%	46	67
Utah	8,534	320,976	2.66%	11	128
Vermont	1,484	60,130	2.47%	15	119
Virginia	11,502	700,552	1.64%	38	79
Washington	18,710	581,680	3.22%	5	155
West Virginia	2,959	174,360	1.70%	36	82
Wisconsin	9,458	540,630	1.75%	33	84
Wyoming	2,247	52,612	4.27%	1	205
50 States	**578,206**	**27,779,473**	**2.08%**	**—**	**100**
Dist of Columbia	659	69,069	0.95%	—	46
Puerto Rico	6,130	425,406	1.44%	—	69

[1] (Associate's Degrees Granted / 2001 Population 18–24 Years) x 100%

[2] 100 equals 50-state indicator value

Bachelor's Degrees Granted

Definition

The number of bachelor's degrees conferred by Title IV-eligible, degree-granting institutions in the 2000–2001 academic year was segmented by state and divided by the population of 18–24 year olds for each state. The 18–24 year old segment of the population was selected because it corresponds most closely to the population of individuals who were the most likely to be pursuing a bachelor's degree. In this way, the number of bachelor's degrees granted by individual states can be compared. In addition to reporting the number of degrees awarded for size of the potential student population, this method of normalization also removed any differences in the age distribution of the population in different states. This was particularly important for those states having a high percentage of retirees.

Relevance

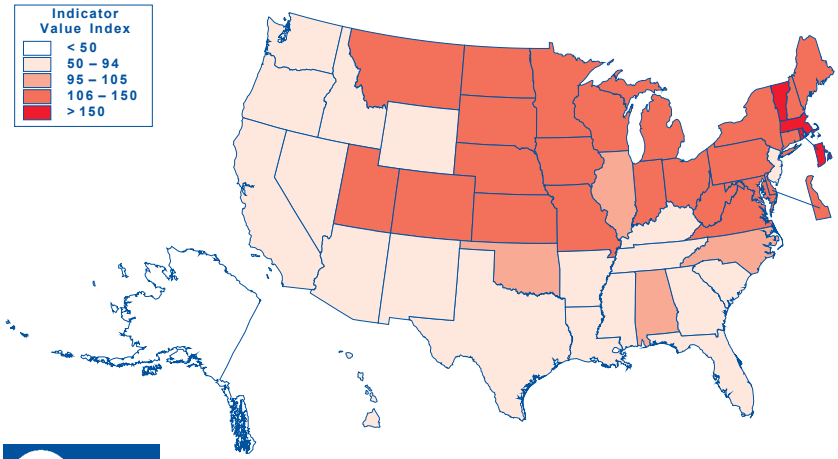
The bachelor's degree represents a four-year course of study beyond high school. Students receiving the bachelor's degree may or may not have received an associate's degree. States ranking high in the number of bachelor's degrees granted as a percentage of population of 18–24 year olds have invested in their higher education infrastructure and have a population of young adults who believe higher education is an important investment in their future.

During the 2000–2001 academic year, 51% of the almost 2.4 million degrees awarded were bachelor's degrees. The total number of bachelor's degrees granted in the 50 states was 1,232,934. That was equivalent to 4.44% of the 18–24 year old population. The median equivalent percentage of bachelor's degrees granted in the 50 states was 4.70% of the 18-24 year old population.

Data Considerations and Limitations

Data on the number of bachelor's degrees awarded were provided by state coordinators for the Integrated Postsecondary Education Data System (IPEDS) or by officials at individual institutions. The IPEDS Fall 2001 data collection provided information on the completions for the period July 1, 2000 through June 30, 2001. These data were collected using a web-based IPEDS data collection system. A total of 4,197 degree-granting institutions located in the United States provided data for the IPEDS collection.

The number of degrees awarded represents only the overall number of degrees awarded by institutions within a state. Degree recipients may include residents, out-of-state students, and foreign students. Data related to the degrees awarded by foreign institutions are not available by U.S. state of residence. Bachelor's degrees granted by U.S. Service Schools are not included in state totals.



Source of Data

Total Bachelor's Degrees Granted: U.S. Department of Education, National Center for Education Statistics. (2003, June). *Digest of Education Statistics 2002*, NCES 2003-060, by Thomas D. Snyder, et.al. <http://www.nces.ed.gov/pubs2003/digest02/> (2003, June 24).

Population, 18–24 Years Old: U.S. Census Bureau, Population Division. State Estimates by Demographic Characteristics—Single Year of Age, Sex, Race, and Hispanic Origin. <http://eire.census.gov/popest/data/states/files/STCH-6R.txt> (2003, October 31); The 2001 population 18–24 years old for the Commonwealth of Puerto Rico was provided by the Population Division of the U.S. Census Bureau on October 8, 2003 per a special request from Taratec Corporation, Columbus, Ohio.

Technology Administration

Bachelor's Degrees Granted as a Percent of the 18–24 Year Old Population: 2000–2001

STATE	Bachelor's Degrees Granted	2001 Population 18–24 Years of Age	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	20,823	446,348	4.67%	27	105
Alaska	1,338	61,957	2.16%	50	49
Arizona	20,856	525,415	3.97%	36	89
Arkansas	9,628	267,275	3.60%	41	81
California	123,382	3,467,051	3.56%	42	80
Colorado	21,410	438,886	4.88%	20	110
Connecticut	14,080	279,450	5.04%	18	114
Delaware	4,504	78,747	5.72%	10	129
Florida	52,557	1,382,179	3.80%	39	86
Georgia	28,790	853,685	3.37%	45	76
Hawaii	4,896	118,429	4.13%	32	93
Idaho	4,646	145,008	3.20%	47	72
Illinois	55,633	1,221,520	4.55%	28	103
Indiana	31,881	623,200	5.12%	17	115
Iowa	18,652	308,490	6.05%	6	136
Kansas	14,662	284,723	5.15%	16	116
Kentucky	15,434	412,425	3.74%	40	84
Louisiana	19,990	485,241	4.12%	33	93
Maine	5,429	111,619	4.86%	21	110
Maryland	22,085	469,101	4.71%	24	106
Massachusetts	42,731	588,812	7.26%	3	164
Michigan	46,115	956,545	4.82%	22	109
Minnesota	23,355	491,611	4.75%	23	107
Mississippi	11,232	318,762	3.52%	44	79
Missouri	30,174	554,288	5.44%	11	123
Montana	5,183	90,564	5.72%	9	129
Nebraska	10,782	179,886	5.99%	7	135
Nevada	4,358	183,978	2.37%	49	53
New Hampshire	7,254	110,720	6.55%	4	148
New Jersey	26,948	691,195	3.90%	37	88
New Mexico	6,551	184,606	3.55%	43	80
New York	96,287	1,788,520	5.38%	12	121
North Carolina	34,767	810,199	4.29%	30	97
North Dakota	4,688	75,518	6.21%	5	140
Ohio	50,856	1,080,487	4.71%	25	106
Oklahoma	15,932	369,182	4.32%	29	97
Oregon	13,887	333,057	4.17%	31	94
Pennsylvania	66,514	1,131,352	5.88%	8	132
Rhode Island	8,283	110,760	7.48%	2	168
South Carolina	16,316	420,990	3.88%	38	87
South Dakota	4,223	81,538	5.18%	15	117
Tennessee	22,823	556,265	4.10%	34	92
Texas	76,074	2,258,949	3.37%	46	76
Utah	17,091	320,976	5.32%	13	120
Vermont	4,697	60,130	7.81%	1	176
Virginia	32,822	700,552	4.69%	26	106
Washington	23,441	581,680	4.03%	35	91
West Virginia	8,704	174,360	4.99%	19	112
Wisconsin	28,493	540,630	5.27%	14	119
Wyoming	1,677	52,612	3.19%	48	72
50 States	**1,232,934**	**27,779,473**	**4.44%**	**—**	**100**
Dist of Columbia	8,166	69,069	11.82%	—	266
Puerto Rico	15,758	425,406	3.70%	—	83

[1] (Bachelor's Degrees Granted / 2001 Population 18–24 Years) x 100%

[2] 100 equals 50-state indicator value

Percent of Bachelor's Degrees in S&E

Definition

Science and engineering (S&E) bachelor's degrees are defined as bachelor's degrees with a major field of study in the area of natural sciences and mathematics and engineering. Specific disciplines include: agriculture and natural resources, biology, computer sciences, physical sciences, and engineering/technology. To calculate this metric, the number of bachelor's degrees awarded to students with one of these major fields of study was divided by the total number of bachelor's degrees awarded in the academic year 2000–2001.

Relevance

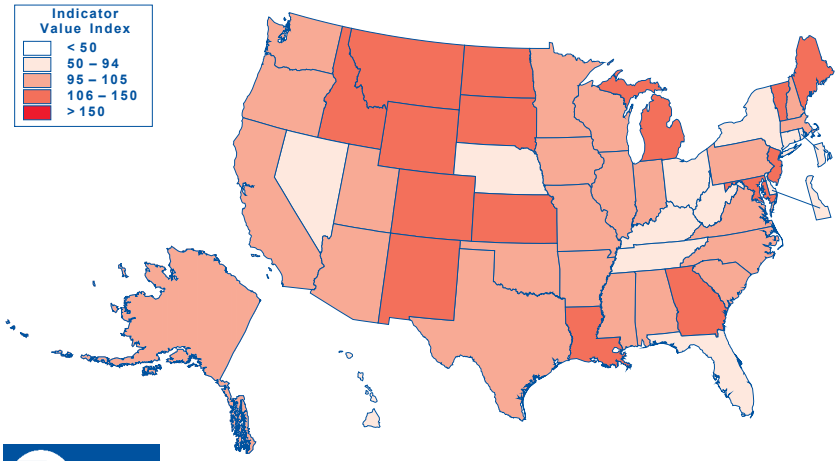
Bachelor's degrees can be granted in many fields of study and represent the initial level of specialization. The students earning bachelor's degrees in S&E are likely to be the technical workers of the future. The absolute number of bachelor's degrees in S&E gives an indication of the capacity of a state's higher education system to train technical workers. This number will vary widely and should be normalized to account for population differences before any comparison of technical training-capacity between states is made.

The percent of bachelor's degrees granted in S&E provides an indication of the orientation of a state's higher education resources toward science and technology. If a state has relatively few institutions of higher learning and those institutions are heavily technology-oriented, the percentage of technical degrees will be high. Similarly, if students find departments in the areas of science and technology that are well-staffed, well-equipped, and doing interesting, cutting edge research they will tend to be attracted to those areas.

The total number of S&E bachelor's degrees granted during 2000–2001 in the 50 states was 213,467, virtually unchanged from the previous year. Bachelor's degrees conferred in S&E fields of study amounted to 17.3% of all bachelor's degrees granted. For the 50 states, the median percentage of bachelor's degrees awarded in S&E was 17.4%.

Data Considerations and Limitations

Data on the number of bachelor's degrees awarded and the fields of specialization were provided by state coordinators for the Integrated Postsecondary Education Data System (IPEDS) or by officials at individual institutions. The IPEDS Fall 2001 data collection provided information on the completions for the period July 1, 2000 through June 30, 2001. These data were collected using a web-based IPEDS data collection system. A total of 4,197 degree-granting institutions located in the United States provided data for the IPEDS collection.



Source of Data

Data on the number and area of specialization of bachelor's degrees granted was compiled from the IPEDS database. For additional information available through IPEDS call (202) 219-1779.

Science and Engineering Bachelor's Degrees Granted: Arrangements for special tabulations were made by Thomas Snyder, Program Director, Annual Reports Program-ECICSD, National Center for Education Statistics at (202) 502-7452 on July 23, 2003 per a special request from Taratec Corporation, Columbus, Ohio.

Total Bachelor's Degrees Granted: U.S. Department of Education, National Center for Education Statistics. (2003, June). *Digest of Education Statistics 2002*, NCES 2003-060, by Thomas D. Snyder, et.al. <http://www.nces.ed.gov/pubs2003/digest02/> (2003, June 24).

Technology Administration

Percent of Bachelor's Degrees Granted in Science and Engineering: 2000–2001

STATE	S&E Bachelor's Degrees Granted	Total Bachelor's Degrees Granted	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	3,672	20,823	17.6%	22	102
Alaska	237	1,338	17.7%	21	102
Arizona	3,571	20,856	17.1%	31	99
Arkansas	1,671	9,628	17.4%	26	100
California	22,403	123,382	18.2%	18	105
Colorado	4,403	21,410	20.6%	4	119
Connecticut	1,759	14,080	12.5%	49	72
Delaware	729	4,504	16.2%	39	93
Florida	7,773	52,557	14.8%	47	85
Georgia	5,351	28,790	18.6%	13	107
Hawaii	664	4,896	13.6%	48	78
Idaho	916	4,646	19.7%	6	114
Illinois	9,652	55,633	17.3%	27	100
Indiana	5,620	31,881	17.6%	23	102
Iowa	3,271	18,652	17.5%	25	101
Kansas	2,777	14,662	18.9%	9	109
Kentucky	2,386	15,434	15.5%	43	89
Louisiana	3,756	19,990	18.8%	10	109
Maine	1,095	5,429	20.2%	5	116
Maryland	4,060	22,085	18.4%	15	106
Massachusetts	7,163	42,731	16.8%	36	97
Michigan	9,086	46,115	19.7%	7	114
Minnesota	3,998	23,355	17.1%	32	99
Mississippi	1,904	11,232	17.0%	34	98
Missouri	5,175	30,174	17.2%	30	99
Montana	1,302	5,183	25.1%	1	145
Nebraska	1,629	10,782	15.1%	45	87
Nevada	514	4,358	11.8%	50	68
New Hampshire	1,210	7,254	16.7%	37	96
New Jersey	4,963	26,948	18.4%	14	106
New Mexico	1,221	6,551	18.6%	12	108
New York	15,180	96,287	15.8%	41	91
North Carolina	6,300	34,767	18.1%	19	105
North Dakota	876	4,688	18.7%	11	108
Ohio	8,086	50,856	15.9%	40	92
Oklahoma	2,745	15,932	17.2%	28	100
Oregon	2,503	13,887	18.0%	20	104
Pennsylvania	11,716	66,514	17.6%	24	102
Rhode Island	1,246	8,283	15.0%	46	87
South Carolina	2,746	16,316	16.8%	35	97
South Dakota	1,003	4,223	23.8%	3	137
Tennessee	3,509	22,823	15.4%	44	89
Texas	12,941	76,074	17.0%	33	98
Utah	2,935	17,091	17.2%	29	99
Vermont	900	4,697	19.2%	8	111
Virginia	5,993	32,822	18.3%	16	105
Washington	3,886	23,441	16.6%	38	96
West Virginia	1,370	8,704	15.7%	42	91
Wisconsin	5,190	28,493	18.2%	17	105
Wyoming	411	1,677	24.5%	2	142
50 States	**213,467**	**1,232,934**	**17.3%**	**—**	**100**
Dist of Columbia	1,689	8,166	20.7%	—	119
Puerto Rico	N/A	—	—	—	—

[1] (S&E Bachelor's Degrees Granted / Total Bachelor's Degrees Granted) x 100%

[2] 100 equals 50-state indicator value

S&E Graduate Students

Definition

The total number of science and engineering (S&E) graduate students enrolled in academic institutions in each state was normalized by dividing by the 18–24 year old population in that state to calculate the S&E graduate students as a percent of the 18–24 year old population. This does not imply that all graduate students are 18–24 years old. Rather, it indicates the size of the population from which the graduate students are most likely to be drawn. This approach corrects for differences in population of the various states and also minimizes any differences in age distribution of the general population between states. For instance, a disproportionate percentage of retirees in one state's population will not affect this metric for that state.

Relevance

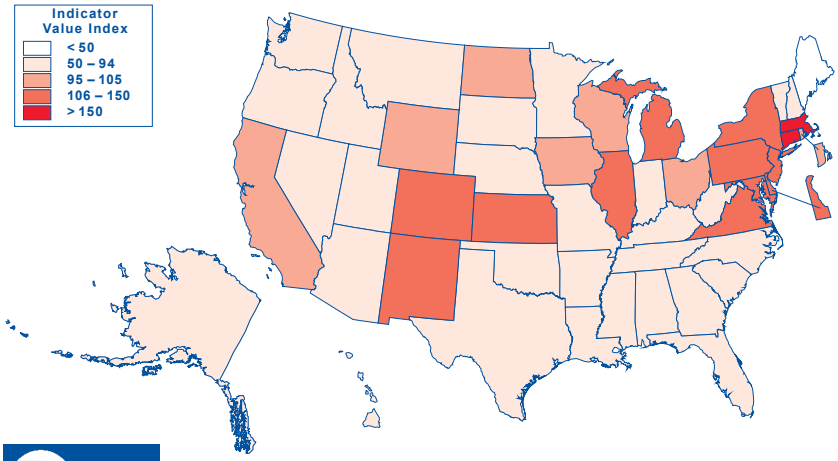
This metric indicates where the next generation of scientists and engineers with advanced degrees are being trained for entry into the economic pipeline. States with the highest percentages of S&E graduate students have invested most heavily in creating the infrastructure to train students for advanced S&E degrees.

The total number of S&E graduate students during 2001 in the 50 states was 418,598 which was equivalent to 1.51% of the 18–24 year old population. For the 50 states, the median number of S&E graduate students was equivalent to 1.29% of the 18–24 year old population. While the largest number of S&E graduate students are being trained in the states of California, New York, and Texas, the states of Massachusetts, Connecticut, and New York are educating the most S&E graduate students relative to the size of their populations of young adults.

Data Considerations and Limitations

The data pertaining to the number of S&E graduate students came from the Fall 2001 National Science Foundation-National Institutes of Health *Survey of Graduate Students and Postdoctorates in Science and Engineering*. The data represent estimates of total enrollment in S&E programs in approximately 11,967 graduate departments at 606 institutions in the U.S. and outlying areas. At the departmental level, 99% of the departments responded, and 84.6% provided complete responses. Complete imputation of data was required for 1% of the departments, while 14.5% had one or more data cells imputed.

The data used in this metric cover graduate enrollment at the beginning of academic year 2001–2002 in all academic institutions in the U.S. that offer doctorate or master's degree programs in any science or engineering field including physical sciences, environmental sciences, mathematical sciences, computer sciences, agricultural sciences, life sciences, social sciences, psychology, medical sciences, and engineering. Graduate students enrolled in schools of nursing, public health, dentistry, veterinary medicine, and other health-related disciplines are not included.



Source of Data

Data on the number of S&E graduate students can be accessed electronically at <http://www.nsf.gov/sbe/srs/gss/start.htm>.

Science and Engineering Graduate Students: National Science Foundation, Division of Science Resources Statistics. *Graduate Students and Postdoctorates in Science and Engineering: Fall 2001*, NSF 03-320, Project Officer, Joan S. Burrelli (Arlington, VA 2003).

Population, 18–24 Years Old: U.S. Census Bureau, Population Division. State Estimates by Demographic Characteristics—Single Year of Age, Sex, Race, and Hispanic Origin. <http://eire.census.gov/popest/data/states/files/STCH-6R.txt> (2003, October 31); The 2001 population 18–24 years old for the Commonwealth of Puerto Rico was provided by the Population Division of the U.S. Census Bureau on October 8, 2003 per a special request from Taratec Corporation, Columbus, Ohio.

Technology Administration

Science and Engineering Graduate Students as a Percent of the 18–24 Year Old Population: 2001

STATE	S&E Graduate Students	Population 18–24 Years of Age	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	5,352	446,348	1.20%	32	80
Alaska	619	61,957	1.00%	43	66
Arizona	6,789	525,415	1.29%	26	86
Arkansas	2,091	267,275	0.78%	48	52
California	54,839	3,467,051	1.58%	14	105
Colorado	8,925	438,886	2.03%	5	135
Connecticut	6,937	279,450	2.48%	2	165
Delaware	1,461	78,747	1.86%	8	123
Florida	16,414	1,382,179	1.19%	33	79
Georgia	9,345	853,685	1.09%	39	73
Hawaii	1,455	118,429	1.23%	29	82
Idaho	1,547	145,008	1.07%	40	71
Illinois	24,115	1,221,520	1.97%	6	131
Indiana	8,510	623,200	1.37%	22	91
Iowa	4,705	308,490	1.53%	15	101
Kansas	5,803	284,723	2.04%	4	135
Kentucky	4,017	412,425	0.97%	45	65
Louisiana	5,739	485,241	1.18%	34	78
Maine	605	111,619	0.54%	50	36
Maryland	9,201	469,101	1.96%	7	130
Massachusetts	20,191	588,812	3.43%	1	228
Michigan	15,763	956,545	1.65%	11	109
Minnesota	6,602	491,611	1.34%	24	89
Mississippi	2,629	318,762	0.82%	47	55
Missouri	6,346	554,288	1.14%	37	76
Montana	1,268	90,564	1.40%	21	93
Nebraska	2,428	179,886	1.35%	23	90
Nevada	1,584	183,978	0.86%	46	57
New Hampshire	1,337	110,720	1.21%	30	80
New Jersey	11,360	691,195	1.64%	12	109
New Mexico	3,269	184,606	1.77%	9	118
New York	38,946	1,788,520	2.18%	3	145
North Carolina	10,476	810,199	1.29%	25	86
North Dakota	1,078	75,518	1.43%	20	95
Ohio	16,233	1,080,487	1.50%	16	100
Oklahoma	4,166	369,182	1.13%	38	75
Oregon	4,010	333,057	1.20%	31	80
Pennsylvania	18,585	1,131,352	1.64%	13	109
Rhode Island	1,646	110,760	1.49%	17	99
South Carolina	3,240	420,990	0.77%	49	51
South Dakota	943	81,538	1.16%	36	77
Tennessee	5,831	556,265	1.05%	41	70
Texas	28,832	2,258,949	1.28%	27	85
Utah	4,074	320,976	1.27%	28	84
Vermont	597	60,130	0.99%	44	66
Virginia	12,193	700,552	1.74%	10	116
Washington	5,891	581,680	1.01%	42	67
West Virginia	2,031	174,360	1.16%	35	77
Wisconsin	7,816	540,630	1.45%	19	96
Wyoming	764	52,612	1.45%	18	96
50 States	**418,598**	**27,779,473**	**1.51%**	**—**	**100**
Dist of Columbia	7,744	69,069	11.21%	—	744
Puerto Rico	3,077	425,406	0.72%	—	48

[1] (S&E Graduate Students / Population 18–24 Years) x 100%

[2] 100 equals 50-state indicator value

Computer Specialists in the Work Force

Definition

The number of computer specialists employed per 10,000 civilian workers provides a measure of the computer intensity in the businesses located within a state. It is calculated by dividing the number of individuals employed in jobs that are classified as computer specialists by the Bureau of Labor Statistics (BLS) by the size of the employed civilian labor force. The intensity of computer skills within the work force provides an indication of the capability of the businesses in a state to embrace and utilize computer technology.

Relevance

Computer specialists may be employed by a company that produces hardware or software products and services or they may have computer-related responsibilities in a company operating in an entirely different line of business. In the latter case, the computer operations represent a necessary function of the business but not its primary industry, such as the operation of an order entry system for a durable goods manufacturer.

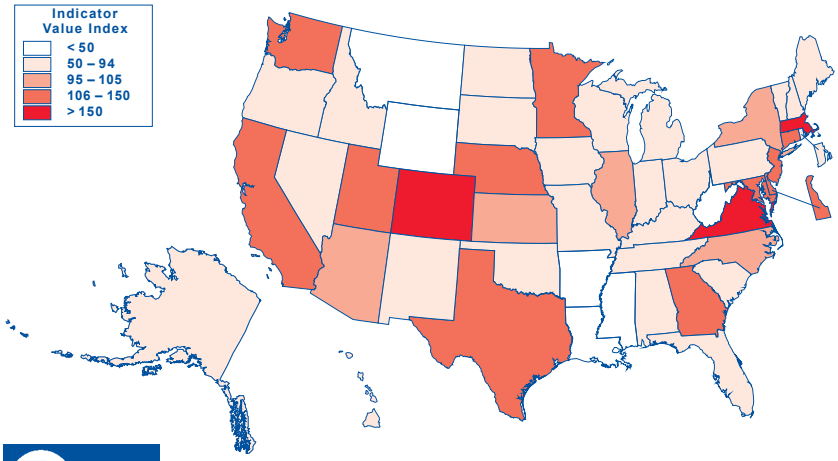
Using the BLS' Standard Occupational Classification, all jobs classified as 15-1000 Computer Specialists were included in the numerator of this metric. This classification includes computer and information scientists, programmers, software engineers, support specialists, systems analysts, database administrators, and network and computer system administrators.

In 2001, the number of computer specialists employed in the 50 states was 2.5 million. While the greatest number of them were employed in the states of California, Texas, and New York, the greatest intensity of computer specialists existed in the states of Virginia, Colorado, and Massachusetts. In 2001, an average of 175 computer specialists were employed per 10,000 workers throughout the United States. The median value for the 50 states was 146 computer specialists per 10,000 workers.

Data Considerations and Limitations

Employment estimates have been taken from the Occupational Employment Statistics (OES) program. The OES survey is a cooperative program between the BLS and State Employment Security Agencies. The OES program surveys approximately 400,000 establishments per year, taking three years to fully collect the sample of 1.2 million establishments. The 2001 OES estimates are benchmarked to a fourth-quarter 2001 reference period. 2001 employment estimates are based on data collected in the 1999, 2000, and 2001 surveys.

The location of a job is considered to be the state where the individual works. The size of the civilian labor force represents an estimate from the Current Population Survey which is based upon the state of residence of the respondent. This discrepancy in geographical definitions and the sample-based work force estimates are likely to create significant errors for small states and for states with a high percentage of cross-border commuting.



Source of Data

Computer Specialists: U.S. Department of Labor, Bureau of Labor Statistics. 2001 State Occupational Employment and Wage Estimates. <http://www.bls.gov/oes/2001/oessrcst.htm> (2003, January 8).

Civilian Labor Force: U.S. Department of Labor, Bureau of Labor Statistics. Local Area Unemployment Statistics (not seasonally adjusted). <http://data.bls.gov/labjava/outside.jsp?survey=la> (2003, March 27).

Technology Administration

Computer Specialists Employed per 10,000 Civilian Workers: 2001

STATE	Computer Specialists Employed	Civilian Labor Force	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	22,570	2,134,519	106	35	60
Alaska	2,930	319,662	92	43	52
Arizona	46,950	2,579,520	182	16	104
Arkansas	7,920	1,248,198	63	48	36
California	352,390	17,182,962	205	8	117
Colorado	76,430	2,379,092	321	2	183
Connecticut	41,330	1,755,366	235	7	134
Delaware	8,760	429,146	204	9	116
Florida	114,290	8,020,151	143	27	81
Georgia	79,530	4,220,240	188	13	107
Hawaii	5,750	591,339	97	41	55
Idaho	6,710	680,932	99	40	56
Illinois	119,780	6,473,285	185	15	105
Indiana	31,870	3,134,262	102	38	58
Iowa	16,910	1,625,462	104	36	59
Kansas	24,430	1,383,234	177	18	101
Kentucky	22,550	1,985,296	114	34	65
Louisiana	14,700	2,052,509	72	46	41
Maine	6,760	685,513	99	39	56
Maryland	73,150	2,841,165	257	4	147
Massachusetts	103,050	3,393,173	304	3	173
Michigan	67,160	5,157,559	130	29	74
Minnesota	57,160	2,888,764	198	11	113
Mississippi	8,020	1,305,326	61	49	35
Missouri	47,300	3,019,994	157	22	89
Montana	3,850	463,479	83	45	47
Nebraska	18,970	952,869	199	10	113
Nevada	9,800	1,103,867	89	44	51
New Hampshire	10,300	700,167	147	25	84
New Jersey	106,300	4,304,972	247	5	141
New Mexico	10,780	861,407	125	31	71
New York	163,470	9,131,620	179	17	102
North Carolina	70,260	4,201,714	167	19	95
North Dakota	4,080	345,910	118	33	67
Ohio	84,170	5,843,847	144	26	82
Oklahoma	21,140	1,670,776	127	30	72
Oregon	29,430	1,817,035	162	21	92
Pennsylvania	92,660	6,211,574	149	24	85
Rhode Island	8,890	548,026	162	20	92
South Carolina	18,190	1,951,986	93	42	53
South Dakota	4,950	411,636	120	32	69
Tennessee	29,720	2,859,938	104	37	59
Texas	198,560	10,559,676	188	14	107
Utah	22,090	1,161,070	190	12	108
Vermont	5,210	339,710	153	23	87
Virginia	128,450	3,680,395	349	1	199
Washington	73,740	3,015,087	245	6	139
West Virginia	5,800	821,844	71	47	40
Wisconsin	40,750	3,028,154	135	28	77
Wyoming	1,590	272,408	58	50	33
50 States	**2,521,550**	**143,745,836**	**175**	**—**	**100**
Dist of Columbia	19,830	312,632	634	—	362
Puerto Rico	5,410	1,296,896	42	—	24

[1] (Computer Specialists Employed / Civilian Labor Force) x 10,000

[2] 100 equals 50-state indicator value

Life & Phys Scientists in the Work Force

Definition

The life and physical scientists employed per 10,000 civilian workers provides a measure of the intensity with which these scientists are utilized in a state's economy. The value of this metric is calculated by dividing the number of individuals employed as life and physical scientists as classified by the Bureau of Labor Statistics (BLS) by the size of the employed civilian labor force in the state. Life and physical scientists may do basic or applied research which leads to new or improved products and processes. They also may create intellectual property and advance the state of technology. Their presence in a state's economy indicates that companies and organizations within the state are actively incorporating technology into their operations.

Relevance

The jobs included in the numerator of this metric are classified in 19-1000 Life Scientists and 19-2000 Physical Scientists in BLS' Standard Occupational Classification. Life scientists include agriculture and food scientists, biological scientists, conservation scientists and foresters, and medical scientists. Physical scientists include astronomers, physicists, atmospheric and space scientists, chemists, materials scientists, environmental scientists, and geoscientists.

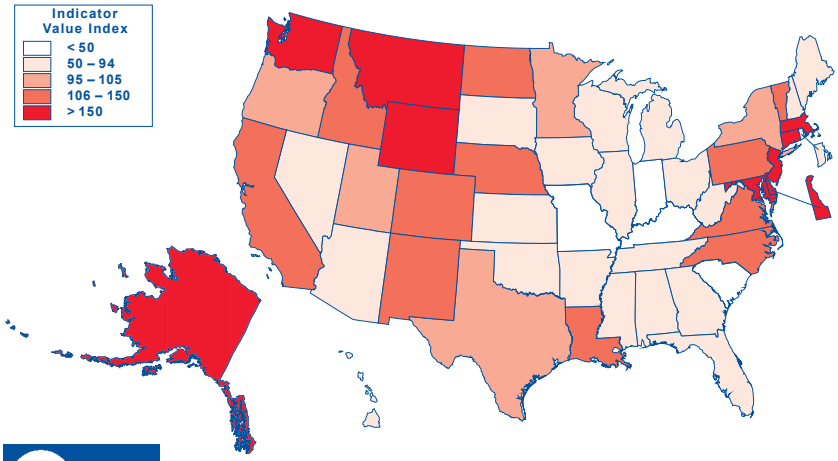
In 2001, the number of life and physical scientists employed in the United States was 300,000. This number is one-eighth the number of computer specialists and one-fourth the number of engineers. While the greatest number of life and physical scientists were employed in the states of California, Texas, and New York, the greatest intensity of scientists were located in the states of Alaska, Delaware, and Wyoming. In 2001, an average of 21 life and physical scientists were employed per 10,000 workers throughout the United States. The median value for the 50 states was 20 scientists per 10,000 workers.

Data Considerations and Limitations

Employment estimates have been taken from the Occupational Employment Statistics (OES) program. The OES survey is a cooperative program between the BLS and State Employment Security Agencies. The OES program surveys approximately 400,000 establishments per year, taking three years to fully collect the sample of 1.2 million establishments. The 2001 OES estimates are benchmarked to a fourth-quarter 2001 reference period. 2001 employment estimates are based on data collected in the 1999, 2000, and 2001 surveys.

This metric has a much smaller number of workers relative to the size of the work force than do the corresponding metrics involving computer specialists or engineers. For this reason, a concentration of a single type of life or physical scientist in a sparsely populated state can have a significant impact on that state's ranking on this metric. This situation occurs in states with a high percentage of their acreage in forests or national parks. Such states frequently have a significant number of foresters, wild life specialists, and conservationists to manage their natural assets coupled with a low population density. Consequently, a number of these states rank highly on this indicator.

A second consideration involves geographic location. The location of the occupation is considered to be the state where the individual works. The size of the civilian labor force represents an estimate from the Current Population Survey which is based upon the state of residence. The discrepancy in geographical definitions coupled with the sample-based work force estimates is likely to create significant errors for small states and for states with a high percentage of cross-border commuting.



Source of Data

Life and Physical Scientists: U.S. Department of Labor, Bureau of Labor Statistics. 2001 State Occupational Employment and Wage Estimates. <http://www.bls.gov/oes/2001/oessrcst.htm> (2003, January 8).

Civilian Labor Force: U.S. Department of Labor, Bureau of Labor Statistics. Local Area Unemployment Statistics (not seasonally adjusted). <http://data.bls.gov/labjava/outside.jsp?survey=la> (2003, March 27).

Technology Administration

Life and Physical Scientists Employed per 10,000 Civilian Workers: 2001

STATE	Life and Physical Scientists Employed	Civilian Labor Force	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	3,800	2,134,519	17.8	31	86
Alaska	2,190	319,662	68.5	1	330
Arizona	3,480	2,579,520	13.5	41	65
Arkansas	1,810	1,248,198	14.5	37	70
California	42,740	17,182,962	24.9	16	120
Colorado	6,350	2,379,092	26.7	14	129
Connecticut	5,910	1,755,366	33.7	8	162
Delaware	2,190	429,146	51.0	2	246
Florida	11,020	8,020,151	13.7	39	66
Georgia	5,310	4,220,240	12.6	44	61
Hawaii	1,070	591,339	18.1	30	87
Idaho	2,050	680,932	30.1	10	145
Illinois	8,460	6,473,285	13.1	42	63
Indiana	2,680	3,134,262	8.6	50	41
Iowa	2,060	1,625,462	12.7	43	61
Kansas	2,550	1,383,234	18.4	29	89
Kentucky	1,880	1,985,296	9.5	48	46
Louisiana	4,960	2,052,509	24.2	18	116
Maine	1,300	685,513	19.0	26	91
Maryland	9,610	2,841,165	33.8	7	163
Massachusetts	13,280	3,393,173	39.1	4	189
Michigan	7,810	5,157,559	15.1	35	73
Minnesota	6,240	2,888,764	21.6	22	104
Mississippi	2,450	1,305,326	18.8	27	90
Missouri	2,630	3,019,994	8.7	49	42
Montana	1,750	463,479	37.8	5	182
Nebraska	2,590	952,869	27.2	13	131
Nevada	1,350	1,103,867	12.2	45	59
New Hampshire	830	700,167	11.9	46	57
New Jersey	15,170	4,304,972	35.2	6	170
New Mexico	2,140	861,407	24.8	17	120
New York	19,100	9,131,620	20.9	23	101
North Carolina	11,760	4,201,714	28.0	11	135
North Dakota	960	345,910	27.8	12	134
Ohio	8,440	5,843,847	14.4	38	70
Oklahoma	2,940	1,670,776	17.6	32	85
Oregon	3,750	1,817,035	20.6	24	99
Pennsylvania	14,310	6,211,574	23.0	19	111
Rhode Island	740	548,026	13.5	40	65
South Carolina	1,860	1,951,986	9.5	47	46
South Dakota	760	411,636	18.5	28	89
Tennessee	4,300	2,859,938	15.0	36	72
Texas	21,350	10,559,676	20.2	25	97
Utah	2,540	1,161,070	21.9	21	105
Vermont	750	339,710	22.1	20	106
Virginia	9,450	3,680,395	25.7	15	124
Washington	9,960	3,015,087	33.0	9	159
West Virginia	1,430	821,844	17.4	33	84
Wisconsin	5,240	3,028,154	17.3	34	83
Wyoming	1,090	272,408	40.0	3	193
50 States	**298,390**	**143,745,836**	**20.8**	**—**	**100**
Dist of Columbia	2,670	312,632	85.4	—	411
Puerto Rico	3,230	1,296,896	24.9	—	120

[1] (Life and Physical Scientists Employed / Civilian Labor Force) x 10,000

[2] 100 equals 50-state indicator value

Engineers in the Work Force

Definition

The number of engineers employed per 10,000 civilian workers provides a measure of the engineering intensity of the businesses located within a state. It is calculated by dividing the number of individuals employed in jobs that are classified as engineering jobs by the Bureau of Labor Statistics (BLS) by the size of the employed civilian labor force. Because engineers are needed to design new products and to keep production processes running, this metric provides an indication of a state's design and manufacturing capacity across all industries.

Relevance

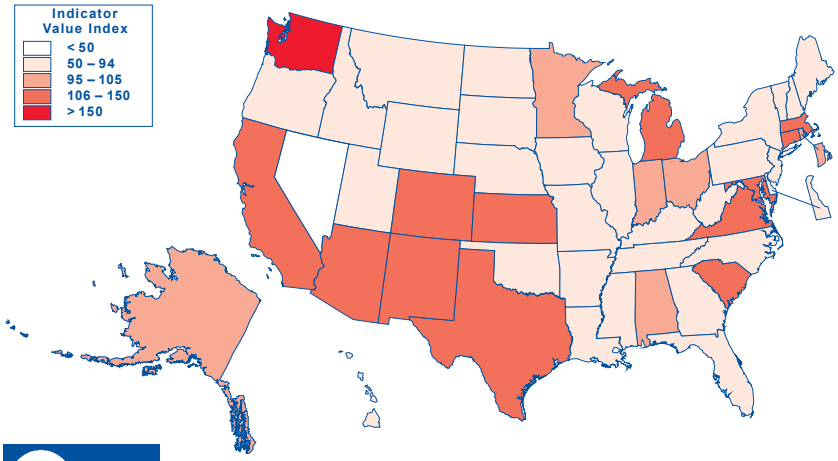
The jobs included in the numerator of this metric come from BLS' Standard Occupational Classification and are classified as 17-2000 Engineers. The following types of engineering work are included: aerospace, agricultural, biomedical, chemical, civil, computer hardware, electrical and electronics, environmental, industrial, marine and naval architectural, materials, mechanical, mining and geological, nuclear, and petroleum.

In 2001, there were 1.1 million engineers employed in the 50 states or 79 engineers per 10,000 workers. This is roughly half of the number of computer specialists and nearly four times the number of life and physical scientists. The largest number of engineers worked in the states of California, Texas, and New York, while the largest concentrations of engineers in the work force were found in the states of Washington, Massachusetts, and Kansas. Among the 50 states, the median number of engineers was 66 per 10,000 workers.

Data Considerations and Limitations

Employment estimates have been taken from the Occupational Employment Statistics (OES) program. The OES survey is a cooperative program between the BLS and State Employment Security Agencies. The OES program surveys approximately 400,000 establishments per year, taking three years to fully collect the sample of 1.2 million establishments. The 2001 OES estimates are benchmarked to a fourth-quarter 2001 reference period. 2001 employment estimates are based on data collected in the 1999, 2000, and 2001 surveys.

The location of an occupation is considered to be the state where the individual works. The size of the civilian labor force represents an estimate from the Current Population Survey which is based upon the state of residence. This discrepancy in geographical definitions coupled with the sample-based work force estimates is likely to create significant errors for small states and for states with a high percentage of cross-border commuting.



Source of Data

Engineers: U.S. Department of Labor, Bureau of Labor Statistics. 2001 State Occupational Employment and Wage Estimates. <http://www.bls.gov/oes/2001/oessrcst.htm> (2003, January 8).

Civilian Labor Force: U.S. Department of Labor, Bureau of Labor Statistics. Local Area Unemployment Statistics (not seasonally adjusted). <http://data.bls.gov/labjava/outside.jsp?survey=la> (2003, March 27).

Technology Administration

Engineers Employed per 10,000 Civilian Workers: 2001

STATE	Engineers Employed	Civilian Labor Force	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	17,680	2,134,519	82.8	14	105
Alaska	2,630	319,662	82.3	15	104
Arizona	26,610	2,579,520	103.2	7	131
Arkansas	5,150	1,248,198	41.3	49	52
California	174,040	17,182,962	101.3	8	128
Colorado	25,400	2,379,092	106.8	6	135
Connecticut	19,400	1,755,366	110.5	4	140
Delaware	3,030	429,146	70.6	22	90
Florida	43,360	8,020,151	54.1	35	69
Georgia	30,960	4,220,240	73.4	20	93
Hawaii	2,680	591,339	45.3	46	57
Idaho	3,160	680,932	46.4	44	59
Illinois	40,650	6,473,285	62.8	27	80
Indiana	23,780	3,134,262	75.9	18	96
Iowa	7,410	1,625,462	45.6	45	58
Kansas	15,540	1,383,234	112.3	3	142
Kentucky	9,760	1,985,296	49.2	40	62
Louisiana	11,960	2,052,509	58.3	32	74
Maine	4,150	685,513	60.5	29	77
Maryland	26,080	2,841,165	91.8	12	116
Massachusetts	39,850	3,393,173	117.4	2	149
Michigan	48,950	5,157,559	94.9	11	120
Minnesota	22,000	2,888,764	76.2	17	97
Mississippi	6,090	1,305,326	46.7	43	59
Missouri	15,920	3,019,994	52.7	38	67
Montana	2,260	463,479	48.8	41	62
Nebraska	5,030	952,869	52.8	37	67
Nevada	4,300	1,103,867	39.0	50	49
New Hampshire	4,870	700,167	69.6	24	88
New Jersey	30,610	4,304,972	71.1	21	90
New Mexico	8,620	861,407	100.1	9	127
New York	57,520	9,131,620	63.0	26	80
North Carolina	23,570	4,201,714	56.1	34	71
North Dakota	1,480	345,910	42.8	47	54
Ohio	46,330	5,843,847	79.3	16	101
Oklahoma	10,340	1,670,776	61.9	28	78
Oregon	10,840	1,817,035	59.7	31	76
Pennsylvania	42,500	6,211,574	68.4	25	87
Rhode Island	4,100	548,026	74.8	19	95
South Carolina	17,210	1,951,986	88.2	13	112
South Dakota	1,760	411,636	42.8	48	54
Tennessee	16,480	2,859,938	57.6	33	73
Texas	101,470	10,559,676	96.1	10	122
Utah	6,940	1,161,070	59.8	30	76
Vermont	1,820	339,710	53.6	36	68
Virginia	40,620	3,680,395	110.4	5	140
Washington	42,180	3,015,087	139.9	1	177
West Virginia	3,950	821,844	48.1	42	61
Wisconsin	21,080	3,028,154	69.6	23	88
Wyoming	1,420	272,408	52.1	39	66
50 States	**1,133,540**	**143,745,836**	**78.9**	**—**	**100**
Dist of Columbia	4,380	312,632	140.1	—	178
Puerto Rico	5,110	1,296,896	39.4	—	50

[1] (Engineers Employed / Civilian Labor Force) x 10,000

[2] 100 equals 50-state indicator value

Recent S&E Bachelor's in the Work Force

Definition

The number of individuals who had earned a bachelor's degree in the fields of science and engineering (S&E) as their highest degree during the academic years of 1999–2000 were identified from the National Science Foundation's Scientists and Engineers Statistical Data System (SESTAT) database. This group was segmented by employer location reported for April 2001. Excluded from the group were degree holders who were unemployed or not in the labor force at that time, as well as those who had earned recent S&E degrees from foreign institutions.

The percent of the civilian work force with a recent degree in S&E was calculated by dividing the number of bachelor's degree holders described above by the size of the 2001 civilian work force in that state. No attempt was made to identify or separate S&E bachelor's degree holders who were employed in a non-science and engineering field.

SESTAT is a database of the employment, education, and demographic characteristics of the nation's scientists and engineers. The National Science Foundation developed the 2001 estimates used in this metric based upon survey results from *The National Survey of Recent College Graduates*. Data on the size of the civilian work force in each state came from the Bureau of Labor Statistics.

Relevance

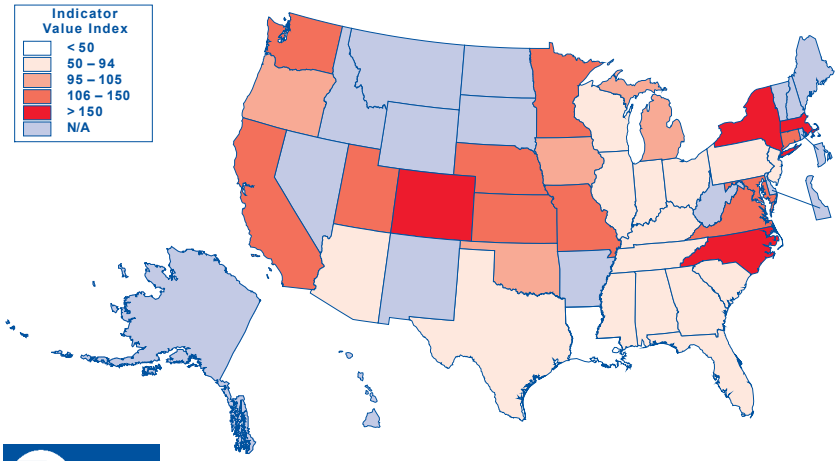
This metric indicates where recent graduates with bachelor's degrees in S&E are choosing to work. It reflects a number of individualistic location criteria related to quality of life, economic opportunities, family responsibilities, and continuing educational opportunities. Regardless of their reasons for selecting a particular location, the presence of large numbers of recent S&E graduates enriches a state's work force and catalyzes the transfer of current technical knowledge into the local economy.

In 2001, 612,760 holders of a recent S&E bachelor's degree were employed in the civilian labor force of the 50 states. There were 42.6 recent S&E bachelor's degree holders per 10,000 civilian workers (0.43% of the civilian labor force). The median state participation of recent S&E bachelor's degree holders was 41.7 per 10,000 civilian workers (0.42% of the civilian labor force).

Data Considerations and Limitations

The National Science Foundation provided estimates of the number of recent S&E bachelor's degree holders by state from a special tabulation of the 2001 SESTAT database. A special tabulation was needed because the data on recent graduates are not usually published at the state level. Data for 16 states were suppressed due to high variances in the state estimates, but the recent S&E bachelor's degree holders employed in these states were included in the total for the 50 states.

Because the survey sample design for the SESTAT database does not include geography as part of the sampling strata, the reliability of the estimates in states with small populations is lower than in more highly populated states. The number of degree holders in each state was rounded to the nearest ten to reflect the precision justified by the statistical analysis.



Source of Data

Recent Science and Engineering Bachelor's Degrees: Arrangements for the special tabulation of the 2001 National Survey of Recent College Graduates were made by Nirmala Kannankutty, Analyst, Division of Science Resources Statistics, National Science Foundation (nkannank@nsf.gov) on June 25, 2003 per a special request from Taratec Corporation, Columbus, Ohio.

Civilian Labor Force: U.S. Department of Labor, Bureau of Labor Statistics. Local Area Unemployment Statistics (not seasonally adjusted). <http://data.bls.gov/labjava/outside.jsp?survey=la> (2003, March 27).

Technology Administration

Persons with a Recent Bachelor's Degree in Science or Engineering per 10,000 Civilian Workers: 2001

STATE	Recent S&E Bachelor's Degrees	Civilian Labor Force	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	5,420	2,134,519	25.4	32	60
Alaska	N/A	319,662	—	—	—
Arizona	9,520	2,579,520	36.9	19	87
Arkansas	N/A	1,248,198	—	—	—
California	84,910	17,182,962	49.4	10	116
Colorado	15,470	2,379,092	65.0	4	153
Connecticut	10,120	1,755,366	57.7	7	135
Delaware	N/A	429,146	—	—	—
Florida	25,050	8,020,151	31.2	29	73
Georgia	14,570	4,220,240	34.5	23	81
Hawaii	N/A	591,339	—	—	—
Idaho	N/A	680,932	—	—	—
Illinois	23,270	6,473,285	35.9	20	84
Indiana	8,540	3,134,262	27.2	30	64
Iowa	7,140	1,625,462	43.9	16	103
Kansas	7,640	1,383,234	55.2	8	130
Kentucky	6,230	1,985,296	31.4	28	74
Louisiana	4,120	2,052,509	20.1	34	47
Maine	4,990	685,513	—	—	—
Maryland	13,240	2,841,165	46.6	12	109
Massachusetts	28,250	3,393,173	83.3	1	195
Michigan	22,670	5,157,559	44.0	15	103
Minnesota	17,630	2,888,764	61.0	5	143
Mississippi	4,580	1,305,326	35.1	22	82
Missouri	14,370	3,019,994	47.6	11	112
Montana	N/A	463,479	—	—	—
Nebraska	4,310	952,869	45.2	14	106
Nevada	N/A	1,103,867	—	—	—
New Hampshire	N/A	700,167	—	—	—
New Jersey	14,220	4,304,972	33.0	25	77
New Mexico	N/A	861,407	—	—	—
New York	63,000	9,131,620	69.0	3	162
North Carolina	29,170	4,201,714	69.4	2	163
North Dakota	N/A	345,910	—	—	—
Ohio	18,520	5,843,847	31.7	27	74
Oklahoma	7,120	1,670,776	42.6	17	100
Oregon	7,400	1,817,035	40.7	18	96
Pennsylvania	15,790	6,211,574	25.4	31	60
Rhode Island	N/A	548,026	—	—	—
South Carolina	6,690	1,951,986	34.3	24	80
South Dakota	N/A	411,636	—	—	—
Tennessee	9,350	2,859,938	32.7	26	77
Texas	37,670	10,559,676	35.7	21	84
Utah	5,360	1,161,070	46.2	13	108
Vermont	N/A	339,710	—	—	—
Virginia	19,200	3,680,395	52.2	9	122
Washington	18,390	3,015,087	61.0	6	143
West Virginia	N/A	821,844	—	—	—
Wisconsin	6,980	3,028,154	23.1	33	54
Wyoming	N/A	272,408	—	—	—
50 States	**612,760**	**143,745,836**	**42.6**	**—**	**100**
Dist of Columbia	10,190	312,632	325.9	—	765
Puerto Rico	3,430	1,296,896	26.4	—	62

[1] (Recent—1999 to 2000—S&E Bachelor's Degrees / Civilian Labor Force) x 10,000

[2] 100 equals 50-state indicator value

Recent S&E PhD's in the Work Force

Definition

The number of individuals who had earned a Ph.D. degree in the fields of science and engineering (S&E) as their highest degree during the academic years of 1995–2000 was identified from the National Science Foundation's Scientists and Engineers Statistical Data System (SESTAT) database. This group was segmented by employer location reported for April 2001. Excluded from the group were degree holders who were unemployed or not in the labor force at that time, as well as those who had earned recent S&E degrees from foreign institutions. Holders of doctoral level professional degrees such as those awarded in medicine, law, or education are not included.

The percent of the civilian work force with a recent degree in science or engineering was calculated by dividing the number of Ph.D. degree holders described above by the size of the 2001 civilian work force in that state. No attempt was made to identify or separate S&E Ph.D. degree holders who were employed in a non-science and engineering field.

SESTAT is a database of the employment, education, and demographic characteristics of the nation's scientists and engineers. The National Science Foundation developed the 2001 estimates used in this metric based upon survey results from *The Survey of Doctorate Recipients*. Data on the size of the civilian work force in each state came from the Bureau of Labor Statistics.

Relevance

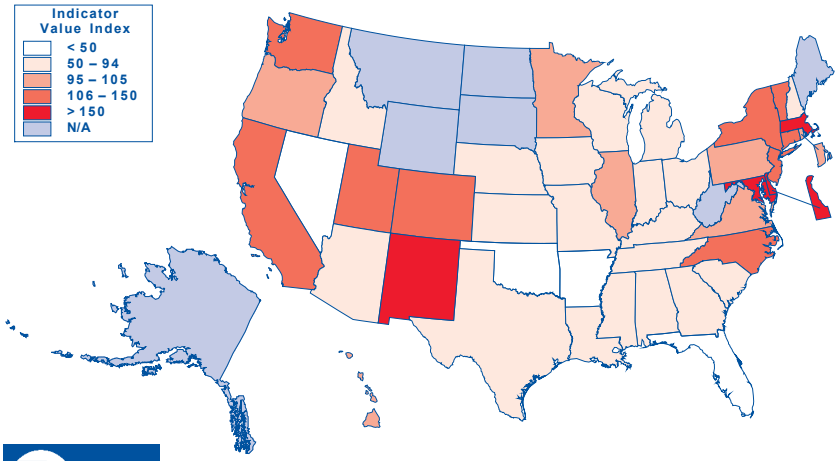
This metric indicates where recent graduates with doctorate degrees in S&E are choosing to work. It reflects a number of individualistic location criteria related to quality of life, economic opportunities, family responsibilities, and continuing educational opportunities. Regardless of their reasons for selecting a particular location, the presence of large numbers of recent S&E graduates enriches a state's work force and catalyzes the transfer of current technical knowledge into the local economy.

In 2001, 127,290 recent S&E doctorate degree holders were employed in the civilian labor force of the 50 states. There were 8.9 recent S&E doctorate degree holders per 10,000 civilian workers (0.09% of the civilian labor force). The median state participation of recent S&E doctorate degree holders was 7.7 per 10,000 civilian workers (0.08% of the civilian labor force).

Data Considerations and Limitations

The National Science Foundation provided estimates of the number of recent S&E doctorate degree holders by state from a special tabulation of the 2001 SESTAT database. A special tabulation was needed because the data on recent graduates are not usually published at the state level. Data for 7 states were suppressed due to high variances in the state estimates, but the recent S&E Ph.D. degree holders employed in these states were included in the total for the 50 states.

Because the survey sample design for the SESTAT database does not include geography as part of the sampling strata, the reliability of the estimates in states with small populations is lower than in more highly populated states. The number of degree holders in each state was rounded to the nearest ten to reflect the precision justified by the statistical analysis.



Source of Data

Recent Science and Engineering Ph.D. Degrees: Arrangements for the special tabulation of the 2001 Survey of Doctorate Recipients were made by Nirmala Kannankutty, Analyst, Division of Science Resources Statistics, National Science Foundation (nkannank@nsf.gov) on June 25, 2003 per a special request from Taratec Corporation, Columbus, Ohio.

Civilian Labor Force: U.S. Department of Labor, Bureau of Labor Statistics. Local Area Unemployment Statistics (not seasonally adjusted). <http://data.bls.gov/labjava/outside.jsp?survey=la> (2003, March 27).

Technology Administration

Persons with a Recent Ph.D. in Science or Engineering per 10,000 Civilian Workers: 2001

STATE	Recent S&E Doctorate Degrees	Civilian Labor Force	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	1,110	2,134,519	5.2	38	59
Alaska	NA	319,662	—	—	—
Arizona	1,530	2,579,520	5.9	32	67
Arkansas	430	1,248,198	3.4	42	39
California	20,400	17,182,962	11.9	6	134
Colorado	2,690	2,379,092	11.3	8	128
Connecticut	2,280	1,755,366	13.0	5	147
Delaware	620	429,146	14.4	4	163
Florida	2,930	8,020,151	3.7	41	41
Georgia	3,090	4,220,240	7.3	25	83
Hawaii	500	591,339	8.5	19	95
Idaho	520	680,932	7.6	23	86
Illinois	5,630	6,473,285	8.7	18	98
Indiana	2,050	3,134,262	6.5	28	74
Iowa	1,080	1,625,462	6.6	27	75
Kansas	840	1,383,234	6.1	31	69
Kentucky	1,060	1,985,296	5.3	36	60
Louisiana	1,020	2,052,509	5.0	39	56
Maine	NA	685,513	—	—	—
Maryland	4,950	2,841,165	17.4	3	197
Massachusetts	8,350	3,393,173	24.6	1	278
Michigan	4,120	5,157,559	8.0	21	90
Minnesota	2,620	2,888,764	9.1	16	102
Mississippi	750	1,305,326	5.7	34	65
Missouri	2,190	3,019,994	7.3	26	82
Montana	NA	463,479	—	—	—
Nebraska	560	952,869	5.9	33	66
Nevada	350	1,103,867	3.2	43	36
New Hampshire	440	700,167	6.3	30	71
New Jersey	5,060	4,304,972	11.8	7	133
New Mexico	1,580	861,407	18.3	2	207
New York	9,680	9,131,620	10.6	10	120
North Carolina	4,000	4,201,714	9.5	13	108
North Dakota	NA	345,910	—	—	—
Ohio	4,290	5,843,847	7.3	24	83
Oklahoma	670	1,670,776	4.0	40	45
Oregon	1,670	1,817,035	9.2	15	104
Pennsylvania	5,780	6,211,574	9.3	14	105
Rhode Island	460	548,026	8.4	20	95
South Carolina	1,070	1,951,986	5.5	35	62
South Dakota	NA	411,636	—	—	—
Tennessee	1,490	2,859,938	5.2	37	59
Texas	8,120	10,559,676	7.7	22	87
Utah	1,130	1,161,070	9.7	11	110
Vermont	330	339,710	9.7	12	110
Virginia	3,270	3,680,395	8.9	17	100
Washington	3,210	3,015,087	10.6	9	120
West Virginia	NA	821,844	—	—	—
Wisconsin	1,920	3,028,154	6.3	29	72
Wyoming	NA	272,408	—	—	—
50 States	**127,290**	**143,745,836**	**8.9**	**—**	**100**
Dist of Columbia	2,960	312,632	94.7	—	1,069
Puerto Rico	390	1,296,896	3.0	—	34

[1] (Recent—1995 to 2000—S&E Doctorate Degrees / Civilian Labor Force) x 10,000

[2] 100 equals 50-state indicator value

Venture Capital

Definition

Venture capital funds are equity investments made in private companies by the venture capital community. The amount of venture capital funds raised in 2002 per $1,000 of gross state product (GSP) is calculated by dividing the total amount of venture capital invested in a state in 2002 by the 2001 GSP of the state which represents the most current data available. GSP is the value added production by the labor and property located in a state.

Relevance

As a method of raising funds for growth and expansion, companies may seek venture capital investments at an early stage in their growth prior to establishing a predictable sales history that would qualify them for other types of financing. Because of the risks involved with this type of investment, venture capitalists require higher rates of return and a greater degree of control in the company in exchange for their investment. This metric provides an indication of the role that venture capital financing plays in each state.

The industries and individual companies that venture capitalists choose to invest in reflect their opinions as to the sources of future wealth creation. Companies that attract venture capital investment are perceived to be working at the cutting edge of technology in their respective industries and are deemed to have a high chance for success.

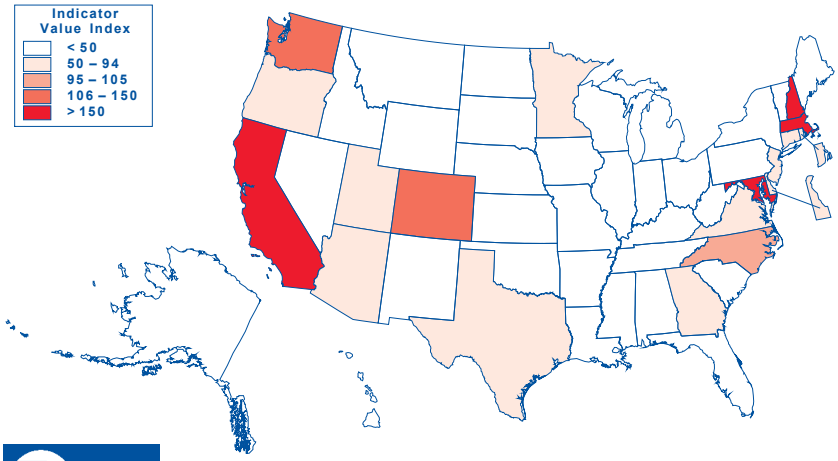
In 2002, venture capital companies invested a total of $21 billion in U.S. companies located in 46 states, while companies located in four states received no venture capital investments. The 2002 level of venture capital investment represented approximately half the amount invested in 2001. It was equivalent to an investment of $2.09 per $1,000 of U.S. gross domestic product (GDP) throughout the 50 states. The median amount of venture capital invested per $1,000 of GSP in the 46 states that received venture capital investment was $0.56. Venture capital investment was disproportionately concentrated in a few states.

Data Considerations and Limitations

These data came from the PricewaterhouseCooper/ Venture Economics/National Venture Capital Association Money Tree™ Survey. The survey measures cash-for-equity investment by the professional venture capital community and similar entities in emerging private companies in the United States. It does not include debt, buyouts, recapitalizations, secondary purchases, IPO's, investments in public companies, or other forms of private equity involving services-in-kind or venture leasing. Also excluded are investments for which the proceeds are primarily intended for acquisitions, such as roll-ups and spinouts of operating divisions of established companies. Convertible debt and bridge loans are included only upon conversion to equity.

Data are obtained from a quarterly survey of venture capital practitioners augmented by other research techniques. In order for a company to be included in the results, it must have received at least one round of funding that involved a recognized, professional venture capital firm. If a company has received funding from a professional venture capital firm in a prior round, all subsequent rounds are included regardless of financing source. If a company receives its first round of funding from a professional venture capital firm in the current period, any investments from prior periods are included regardless of financing source. Therefore, results are updated periodically and are subject to change at any time.

Note: The scope of this survey may change from year to year. Unless data from previous years have been restated, they may not be directly comparable.



Source of Data

Venture Capital: PricewaterhouseCoopers, Venture Economics, and National Venture Capital Association. *MoneyTree*™ Survey.

Gross State Product: U.S. Department of Commerce, Bureau of Economic Analysis. (2003, May). Gross State Product: 2001. <http://www.bea.gov/bea/regional/gsp/> (2003, June 3); Puerto Rico Planning Board, Program of Economic and Social Planning. *Appendix Statistics: Table 1—Selected Series of Income and Product, Total and Per Capita*. <http://www.jp.gobierno.pr>. (2003, October 2).

Amount of Venture Capital Funds Invested per $1,000 of GSP: 2002

STATE	Venture Capital Invested, millions	2001 GSP, millions	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	$23.7	$121,490	$0.19	38	9
Alaska	$0.0	$28,581	$0.00	47	0
Arizona	$191.4	$160,687	$1.19	18	57
Arkansas	$9.7	$67,913	$0.14	39	7
California	$9,467.3	$1,359,265	$6.96	2	333
Colorado	$547.3	$173,772	$3.15	5	150
Connecticut	$218.6	$166,165	$1.32	17	63
Delaware	$67.3	$40,509	$1.66	11	79
Florida	$356.8	$491,488	$0.73	23	35
Georgia	$587.7	$299,874	$1.96	8	94
Hawaii	$2.9	$43,710	$0.07	43	3
Idaho	$17.6	$36,905	$0.48	28	23
Illinois	$229.0	$475,541	$0.48	27	23
Indiana	$52.1	$189,919	$0.27	34	13
Iowa	$2.0	$90,942	$0.02	46	1
Kansas	$7.2	$87,196	$0.08	40	4
Kentucky	$3.0	$120,266	$0.02	45	1
Louisiana	$31.5	$148,697	$0.21	36	10
Maine	$11.9	$37,449	$0.32	33	15
Maryland	$624.8	$195,007	$3.20	4	153
Massachusetts	$2,362.7	$287,802	$8.21	1	392
Michigan	$73.0	$320,470	$0.23	35	11
Minnesota	$326.1	$188,050	$1.73	9	83
Mississippi	$5.1	$67,125	$0.08	42	4
Missouri	$169.5	$181,493	$0.93	21	45
Montana	$0.0	$22,635	$0.00	47	0
Nebraska	$11.9	$56,967	$0.21	37	10
Nevada	$26.8	$79,220	$0.34	32	16
New Hampshire	$230.1	$47,183	$4.88	3	233
New Jersey	$567.8	$365,388	$1.55	13	74
New Mexico	$36.9	$55,426	$0.67	24	32
New York	$803.2	$826,488	$0.97	20	46
North Carolina	$547.3	$275,615	$1.99	7	95
North Dakota	$0.0	$19,005	$0.00	47	0
Ohio	$220.8	$373,708	$0.59	25	28
Oklahoma	$50.5	$93,855	$0.54	26	26
Oregon	$159.1	$120,055	$1.33	16	63
Pennsylvania	$419.7	$408,373	$1.03	19	49
Rhode Island	$58.4	$36,939	$1.58	12	75
South Carolina	$5.0	$115,204	$0.04	44	2
South Dakota	$18.1	$24,251	$0.74	22	36
Tennessee	$82.5	$182,515	$0.45	29	22
Texas	$1,284.2	$763,874	$1.68	10	80
Utah	$94.6	$70,409	$1.34	15	64
Vermont	$1.5	$19,149	$0.08	41	4
Virginia	$408.7	$273,070	$1.50	14	71
Washington	$599.0	$222,950	$2.69	6	128
West Virginia	$17.9	$42,368	$0.42	30	20
Wisconsin	$64.5	$177,354	$0.36	31	17
Wyoming	$0.0	$20,418	$0.00	47	0
50 States	**$21,096.4**	**$10,072,735**	**$2.09**	**—**	**100**
Dist of Columbia	$67.3	$64,459	$1.04	—	50
Puerto Rico	$0.5	$44,173	$0.01	—	1

[1] (2002 Venture Capital Invested / 2001 GSP) x $1,000

[2] 100 equals 50-state indicator value

SBIC Funds

Definition

Congress created the Small Business Investment Company (SBIC) Program in 1958 to fill the gap between available venture capital and the financial needs of small business in start-up and growth situations. The average annual amount of SBIC funds disbursed per $1,000 of gross state product (GSP) was calculated by averaging the amount of SBIC funds invested in small business in a particular state for the three-year period from 2000–2002 and dividing by that state's 2001 GSP. GSP is the value added production by the labor and property located in a state.

Relevance

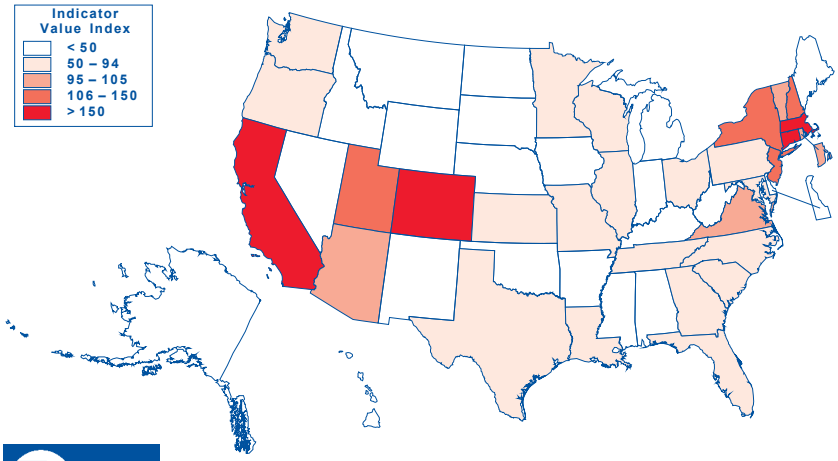
SBICs are profit-motivated businesses that provide equity capital, long-term loans, debt-equity investments, and management assistance to small businesses. They are licensed by the Small Business Administration (SBA) and leverage their own capital with funds borrowed at favorable rates with an SBA guarantee. This metric provides an indication of the role that SBIC financing plays in each state.

SBICs make funding available to all types of manufacturing and service industries, but many focus on companies with new products or services because of the strong growth potential of such firms. SBICs are prohibited from investing in other SBICs, finance and investment companies or finance-type leasing companies, unimproved real estate, companies with less than one-half of their assets and operations in the U.S., passive or casual businesses, or companies which will use the proceeds to acquire farm land. SBIC investment can take many forms including seed financing, start-up capital, early stage capital, expansion financing, later state financing, or MBO/LBO/Acquisition financing.

While companies in two states received no SBIC disbursements during the 2000–2002 period, SBICs made approximately 4,000 annual disbursements to small U.S. companies in the remaining 48 states that totaled $4.2 billion annually. This represented an investment equivalent to $0.41 per $1,000 of U.S. gross domestic product, approximately one-fifth the total amount of the venture capital investment. The median amount of SBIC funds disbursed per $1,000 of GSP in the 50 states was $0.27.

Data Considerations and Limitations

A three-year average of SBIC disbursements was used to minimize year-to-year variability. GSP data from 2001, the middle year of the three-year period, was used to normalize the disbursement data to account for differences in the size of a state's business base.



Source of Data

SBIC Funds Disbursed: Small Business Administration. (2003, February 13). *SBIC Program Financing to Small Business—Table 7: ALL SBIC Program Licensees Financing to Small Businesses by State*. <http://www.sba.gov/INV/stat/table7.pdf> (2003, June 3).

Gross State Product: U.S. Department of Commerce, Bureau of Economic Analysis. (2003, May). Gross State Product: 2001. <http://www.bea.gov/bea/regional/gsp/> (2003, June 3); Puerto Rico Planning Board, Program of Economic and Social Planning. *Appendix Statistics: Table 1—Selected Series of Income and Product, Total and Per Capita*. <http://www.jp.gobierno.pr>. (2003, October 2).

Technology Administration

Average Annual Amount of SBIC Funds Disbursed per $1,000 of GSP: 2000–2002

STATE	Avg. Annual Number of SBIC Funding Disbursements	Average Annual SBIC Funds Disbursed	2001 GSP, millions	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	28.7	$21,452,404	$121,490	$0.18	32	43
Alaska	0.0	$0	$28,581	$0.00	49	0
Arizona	53.7	$67,285,292	$160,687	$0.42	10	101
Arkansas	22.7	$11,201,808	$67,913	$0.16	33	40
California	956.7	$1,181,089,610	$1,359,265	$0.87	2	210
Colorado	102.7	$163,772,410	$173,772	$0.94	1	227
Connecticut	89.3	$111,810,833	$166,165	$0.67	4	162
Delaware	6.7	$5,948,500	$40,509	$0.15	36	35
Florida	116.7	$128,641,137	$491,488	$0.26	26	63
Georgia	109.0	$97,282,920	$299,874	$0.32	21	78
Hawaii	3.3	$796,967	$43,710	$0.02	48	4
Idaho	1.7	$701,500	$36,905	$0.02	47	5
Illinois	351.0	$156,567,739	$475,541	$0.33	20	79
Indiana	38.0	$19,070,919	$189,919	$0.10	41	24
Iowa	18.3	$14,681,083	$90,942	$0.16	34	39
Kansas	44.3	$28,984,361	$87,196	$0.33	19	80
Kentucky	34.3	$14,645,828	$120,266	$0.12	39	29
Louisiana	14.7	$32,244,436	$148,697	$0.22	29	52
Maine	4.7	$7,275,459	$37,449	$0.19	31	47
Maryland	85.0	$65,548,046	$195,007	$0.34	18	81
Massachusetts	277.7	$209,662,660	$287,802	$0.73	3	176
Michigan	54.0	$49,202,482	$320,470	$0.15	35	37
Minnesota	75.3	$72,934,123	$188,050	$0.39	13	94
Mississippi	17.3	$9,192,424	$67,125	$0.14	38	33
Missouri	61.3	$62,515,459	$181,493	$0.34	17	83
Montana	1.7	$1,299,915	$22,635	$0.06	44	14
Nebraska	1.7	$2,561,111	$56,967	$0.04	45	11
Nevada	16.3	$6,371,391	$79,220	$0.08	43	19
New Hampshire	36.7	$23,721,313	$47,183	$0.50	7	121
New Jersey	166.7	$189,233,621	$365,388	$0.52	6	125
New Mexico	10.3	$6,444,778	$55,426	$0.12	40	28
New York	517.3	$373,310,388	$826,488	$0.45	8	109
North Carolina	60.7	$84,756,563	$275,615	$0.31	23	74
North Dakota	1.0	$833,333	$19,005	$0.04	46	11
Ohio	80.0	$107,361,073	$373,708	$0.29	24	69
Oklahoma	19.0	$13,448,635	$93,855	$0.14	37	35
Oregon	27.3	$33,083,784	$120,055	$0.28	25	67
Pennsylvania	161.7	$147,771,808	$408,373	$0.36	14	87
Rhode Island	16.7	$15,444,779	$36,939	$0.42	11	101
South Carolina	14.3	$28,699,068	$115,204	$0.25	27	60
South Dakota	5.3	$2,012,967	$24,251	$0.08	42	20
Tennessee	53.0	$64,864,764	$182,515	$0.36	15	86
Texas	239.3	$263,197,651	$763,874	$0.34	16	83
Utah	65.7	$38,257,537	$70,409	$0.54	5	131
Vermont	7.3	$8,357,849	$19,149	$0.44	9	105
Virginia	83.3	$107,769,978	$273,070	$0.39	12	95
Washington	82.3	$70,043,235	$222,950	$0.31	22	76
West Virginia	12.3	$8,647,955	$42,368	$0.20	30	49
Wisconsin	33.7	$43,162,054	$177,354	$0.24	28	59
Wyoming	0.0	$0	$20,418	$0.00	49	0
50 States	**4,281**	**$4,173,163,947**	**$10,072,735**	**$0.41**	**—**	**100**
Dist of Columbia	16.7	$16,690,066	$64,459	$0.26	—	62
Puerto Rico	8.7	$3,824,664	$44,173	$0.09	—	21

[1] (Average Annual SBIC Funds Disbursed / 2001 GSP) / $1,000

[2] 100 equals 50-state indicator value

IPO Funds

Definition

Initial public offerings (IPOs) are another method by which companies raise capital for growth and expansion. The average annual amount of IPO funds raised per $1,000 of gross state product (GSP) was calculated by taking the average annual amount of IPO funds raised by companies in the state for the period of 2000–2002 and dividing by the 2001 GSP for that state. GSP is the value added production by the labor and property located in a state.

Relevance

IPOs occur when a privately owned company wishes to offer shares of its common stock to the public. This process is under the control of the Securities and Exchange Commission. Companies are required to file appropriate documentation prior to being allowed to start trading. An IPO is one method available to a company for raising funds for expansion, product development, or acquisition. It may also represent an exit strategy for venture capitalists who have made earlier investments in the company. IPOs are typically used by companies that have grown to the stage of having a predictable sales history. This metric provides an indication of the role that IPO financing plays in each state.

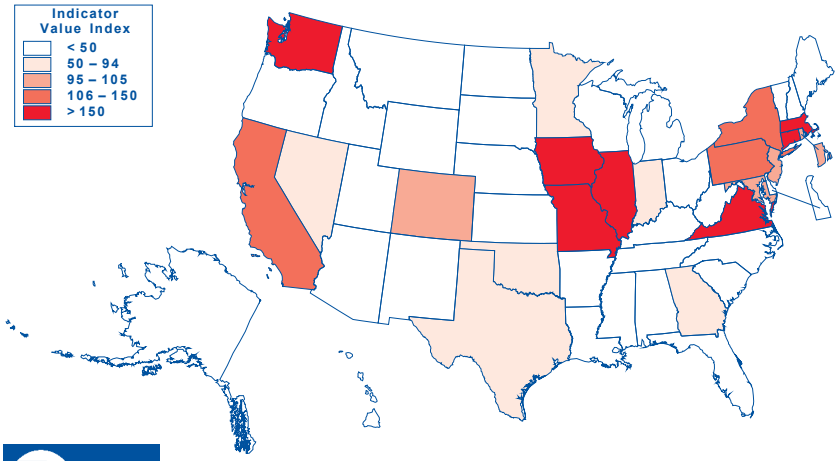
Total IPO activity (U.S. and foreign company offerings in the U.S. market) declined significantly during the 2000–2002 period. In 2002 there were only 75 IPOs with gross proceeds of $25.4 billion compared to 91 IPOs raising $41.2 billion in 2001 and 446 IPOs raising $108.2 billion in 2000. The 75 IPOs in 2002 represented the lowest annual total since the 62 IPOs in 1979.

In fifteen states no IPO activity was reported during the 2000–2002 time period. In the remaining 35 states, U.S. companies raised $106.5 billion from 2000–2002 through IPOs for an average of $35.5 billion annually. This represented an investment equivalent to $3.52 per $1,000 of U.S. gross domestic product, a substantial decline from the value of $5.02 in IPO fund-raising per $1000 of U.S. gross domestic product reported for the 1999–2001 time period. Although IPO fund-raising has declined significantly since 2000, it nevertheless remains a larger source of funds for companies than either venture capital investment or SBIC investment. However, since the individual deals are so much larger in the case of IPOs, fewer companies are using this type of fund-raising. The median amount of IPO funds raised per $1,000 of GSP in the 50 states for the 2000–2002 time period was $0.66. The large difference between the average and median values indicates that IPO activity is disproportionately concentrated in a few states.

Data Considerations and Limitations

For this metric, the average annual amount of IPO funds raised was calculated over a three-year period to reduce the year-to-year variability in the data.

The data includes all U.S.-based IPOs regardless of the stock type. Excluded are real estate investment trusts (REITs), bank conversions, closed-end funds, and over-the-counter offerings.



Source of Data

IPO Funds Raised: Hale and Dorr LLP. (2001, February 26). *2000 The IPO Report*. <http://www.haledorr.com/db30/cgi-bin/pubs/2000_IPO_report.pdf> (2001, June 13); 2001 and 2002 IPO data were prepared by Timothy Gallagher (timothy.gallagher@haledorr.com) at Hale and Dorr LLP, Boston, MA, per a special request from Taratec Corporation, Columbus, Ohio.

Gross State Product: U.S. Department of Commerce, Bureau of Economic Analysis. (2003, May). Gross State Product: 2001. <http://www.bea.gov/bea/regional/gsp/> (2003, June 3).

Average Annual Amount of IPO Funds Raised per $1,000 of GSP: 2000–2002

STATE	Average Annual IPO Funds Raised, millions	2001 GSP, millions	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	$68	$121,490	$0.56	28	16
Alaska	$0	$28,581	$0.00	36	0
Arizona	$257	$160,687	$1.60	21	45
Arkansas	$0	$67,913	$0.00	36	0
California	$5,533	$1,359,265	$4.07	10	116
Colorado	$599	$173,772	$3.45	13	98
Connecticut	$2,255	$166,165	$13.57	2	385
Delaware	$0	$40,509	$0.00	36	0
Florida	$549	$491,488	$1.12	23	32
Georgia	$698	$299,874	$2.33	17	66
Hawaii	$0	$43,710	$0.00	36	0
Idaho	$0	$36,905	$0.00	36	0
Illinois	$3,603	$475,541	$7.58	4	215
Indiana	$617	$189,919	$3.25	15	92
Iowa	$617	$90,942	$6.78	5	192
Kansas	$0	$87,196	$0.00	36	0
Kentucky	$45	$120,266	$0.38	32	11
Louisiana	$85	$148,697	$0.57	27	16
Maine	$23	$37,449	$0.61	26	17
Maryland	$700	$195,007	$3.59	11	102
Massachusetts	$2,422	$287,802	$8.42	3	239
Michigan	$82	$320,470	$0.25	34	7
Minnesota	$394	$188,050	$2.10	19	60
Mississippi	$0	$67,125	$0.00	36	0
Missouri	$993	$181,493	$5.47	7	155
Montana	$0	$22,635	$0.00	36	0
Nebraska	$22	$56,967	$0.39	31	11
Nevada	$154	$79,220	$1.94	20	55
New Hampshire	$14	$47,183	$0.30	33	9
New Jersey	$1,281	$365,388	$3.51	12	100
New Mexico	$0	$55,426	$0.00	36	0
New York	$4,191	$826,488	$5.07	8	144
North Carolina	$199	$275,615	$0.72	25	20
North Dakota	$0	$19,005	$0.00	36	0
Ohio	$53	$373,708	$0.14	35	4
Oklahoma	$266	$93,855	$2.84	16	81
Oregon	$47	$120,055	$0.39	30	11
Pennsylvania	$1,810	$408,373	$4.43	9	126
Rhode Island	$125	$36,939	$3.37	14	96
South Carolina	$0	$115,204	$0.00	36	0
South Dakota	$0	$24,251	$0.00	36	0
Tennessee	$233	$182,515	$1.28	22	36
Texas	$1,752	$763,874	$2.29	18	65
Utah	$70	$70,409	$0.99	24	28
Vermont	$0	$19,149	$0.00	36	0
Virginia	$1,545	$273,070	$5.66	6	161
Washington	$4,126	$222,950	$18.51	1	525
West Virginia	$0	$42,368	$0.00	36	0
Wisconsin	$71	$177,354	$0.40	29	11
Wyoming	$0	$20,418	$0.00	36	0
50 States	**$35,499**	**$10,072,735**	**$3.52**	**—**	**100**
Dist of Columbia	$63	$64,459	$0.97	—	28
Puerto Rico	N/A	—	—	—	—

[1] (Average Annual IPO Funds Raised / 2001 GSP) x $1,000

[2] 100 equals 50-state indicator value

Business Incubators

Definition

The number of business incubators available to serve 10,000 businesses in a particular state was calculated by dividing the total number of business incubators in that state in 2003 by the total number of businesses in the state and multiplying the result by 10,000. In this case, the data were normalized to the number of businesses since businesses represent the clients that the incubator is designed to serve. Data on the number of businesses in a state in 2001 was used since that data represents the most current available.

Relevance

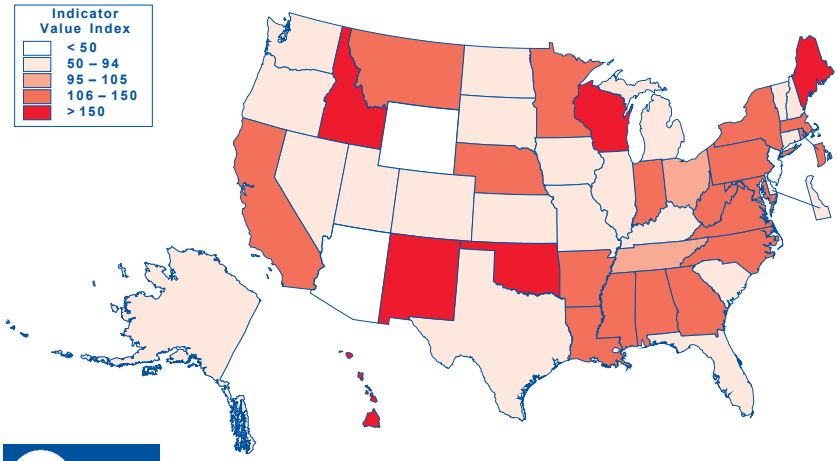
In addition to accessible capital, other resources can facilitate the growth and development of entrepreneurial companies. Business incubators offering specialized physical facilities at reduced rates, flexible lease terms, shared support services, business assistance services, and management coaching enable start-up companies to stretch their resources farther and to develop the internal capacity to grow their companies. The entire bundle of facilities and value-added support services make the incubation program attractive to start-up companies. The success rate of businesses that have graduated from business incubators is significantly higher than that of start-up companies without this support, although it is not clear whether this success is due to the initial screening process that many incubators employ. Many states support business incubators as a means of stimulating economic development.

Over half of all North American business incubators are sponsored by government and non-profit organizations. Incubators facilitate job creation, economic diversification, and/or expansion of the tax base. Another quarter of the business incubators are affiliated with academic institutions, and, in addition, these incubators provide opportunities to commercialize technology developed at the institution and investment opportunities for alumni, faculty, and associated groups.

In 2003, there were 961 incubators in the 50 states, a modest increase from 930 in the previous year. This corresponded to 1.36 incubators per 10,000 business establishments. The median number of business incubators per 10,000 business establishments in the 50 states was 1.38.

Data Considerations and Limitations

Data on the number and location of incubators came from the database of the National Business Incubation Association (NBIA), a not-for-profit 501(c)(3) membership organization headquartered in Athens, Ohio. NBIA identifies incubators from inquiries to their web site, referrals from other incubators, incubators who purchase materials through their bookstore, etc. Their database of business incubators appears to be the most complete nationwide listing available, and NBIA estimates that it covers more than 50% of the total U.S. incubators. However, there is no reliable method of determining exactly what fraction of the total number of incubators is included in the NBIA database.



Source of Data

Business Incubators: National Business Incubation Association, 20 East Circle Drive, #37198, Athens, OH 45701. (2003, October 15).

Establishments: U.S. Census Bureau. *County Business Patterns—United States: 2001*. (2003, April). <http://www.census.gov/prod/2003pubs/01cbp/cbp01-1.pdf> (2003, October 6); U.S. Census Bureau. *County Business Patterns—Puerto Rico: 2001*. (2003, May). <http://www.census.gov/prod/2003pubs/01cbp/cbp01-53.pdf> (2003, October 6).

Technology Administration

Number of Business Incubators per 10,000 Business Establishments: 2003

STATE	Business Incubators	2001 Establishments	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	16	99,261	1.61	16	119
Alaska	2	18,589	1.08	29	79
Arizona	4	116,304	0.34	49	25
Arkansas	10	62,725	1.59	18	117
California	123	806,733	1.52	22	112
Colorado	13	139,225	0.93	32	69
Connecticut	7	92,105	0.76	45	56
Delaware	2	24,074	0.83	40	61
Florida	36	434,583	0.83	41	61
Georgia	30	202,505	1.48	24	109
Hawaii	7	30,175	2.32	6	171
Idaho	12	37,622	3.19	2	235
Illinois	26	307,356	0.85	37	62
Indiana	22	145,580	1.51	23	111
Iowa	7	80,392	0.87	36	64
Kansas	6	74,565	0.80	42	59
Kentucky	10	89,501	1.12	28	82
Louisiana	20	100,780	1.98	9	146
Maine	12	39,650	3.03	3	223
Maryland	20	129,301	1.55	20	114
Massachusetts	36	177,434	2.03	8	149
Michigan	20	236,711	0.84	38	62
Minnesota	26	140,968	1.84	12	136
Mississippi	12	59,056	2.03	7	150
Missouri	18	144,071	1.25	27	92
Montana	5	32,294	1.55	19	114
Nebraska	8	49,710	1.61	17	118
Nevada	5	48,863	1.02	30	75
New Hampshire	3	37,312	0.80	43	59
New Jersey	14	234,558	0.60	48	44
New Mexico	10	42,686	2.34	5	172
New York	76	493,863	1.54	21	113
North Carolina	34	204,075	1.67	15	123
North Dakota	2	20,206	0.99	31	73
Ohio	37	269,944	1.37	26	101
Oklahoma	20	85,276	2.35	4	173
Oregon	9	101,003	0.89	35	66
Pennsylvania	58	295,096	1.97	10	145
Rhode Island	5	28,539	1.75	13	129
South Carolina	7	97,030	0.72	46	53
South Dakota	2	24,032	0.83	39	61
Tennessee	18	129,659	1.39	25	102
Texas	43	473,868	0.91	34	67
Utah	4	56,851	0.70	47	52
Vermont	2	21,449	0.93	33	69
Virginia	34	176,532	1.93	11	142
Washington	13	164,072	0.79	44	58
West Virginia	7	40,439	1.73	14	127
Wisconsin	48	140,540	3.42	1	251
Wyoming	0	18,453	0.00	50	0
50 States	**961**	**7,075,616**	**1.36**	**—**	**100**
Dist of Columbia	3	19,686	1.52	—	112
Puerto Rico	2	44,372	0.45	—	33

[1] (Business Incubators / 2001 Establishments) x 10,000

[2] 100 equals 50-state indicator value

High-technology Establishments

Definition

This metric refers to the percentage of the total number of establishments within a state that fall into one of the 39 North American Industry Classification System (NAICS) codes identified by the U.S. Department of Commerce as high-technology industries. High-technology industries are those with employment in both research and development and in all technology-oriented occupations that account for a proportion of employment that is at least twice the average for all industries in the Occupational Employment Statistics Survey. (See page 1–4 for a listing of high-technology NAICS codes.) High-technology occupations are scientific, technical, and engineering occupations that include engineers, life and physical scientists, mathematical specialists, engineering and science technicians, computer specialists, and engineering, scientific, and computer managers.

The percent of establishments in high-technology NAICS codes was calculated by dividing the number of establishments in the state in 2000 that were classified into one of the 39 high-technology NAICS codes by the total number of establishments in that state in 2000.

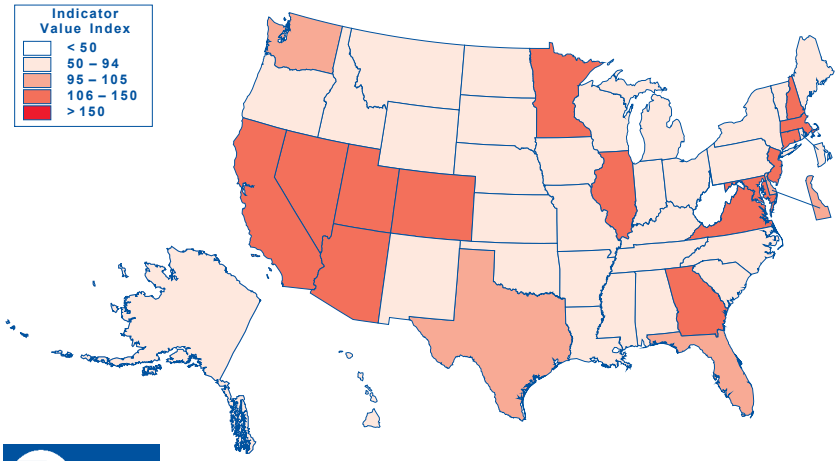
Relevance

The percentage of a state's business base that is classified as high-technology provides a measure of the extent to which the state's business base is poised to capitalize on new technology. High-technology industries include both manufacturing and service industries where technology is rapidly evolving. As the national economy shifts toward higher value-added products and IT and communications services, the states with the highest percentage of high-technology business establishments will be best poised to take advantage of this shift.

In 2000, there were 425,992 establishments in the 50 states that were classified in the high-technology NAICS codes. This represents 6.0% of the 7,050,393 total establishments in all 50 states in 2000. The percentage of the business base that consists of high-technology establishments ranged from 3.0% to 8.6% for individual states. The median percentage was 5.3%. The states of New Jersey, Massachusetts and Colorado had the highest concentrations of high-technology establishments, while the state of California had the largest number of them.

Data Considerations and Limitations

Not all establishments that are identified by a single NAICS code will employ high-technology or high-technology workers to the same degree. Some may be very technically sophisticated while others may not have changed their mode of operation for many years. The data do not currently exist to perform this analysis on an establishment-by-establishment basis. Therefore, although NAICS code classifications represent only an approximation of technical sophistication, they are the best data available at this time. Certainly, there are establishments in other NAICS codes that employ high-technology and high-technology workers, and there are also some establishments in these 39 NAICS codes that do not. However, these 39 NAICS codes are thought to contain the highest percentage of companies that employ high-technology workers.



Source of Data

The U.S. Census Bureau furnished the data for this metric from a special tabulation based upon the 6.9 million employer-establishments contained in the Standard Statistical Establishment List. This is the same database that is used to generate *County Business Patterns*. Arrangements for special tabulations can be made by contacting Trey Cole at the U.S. Census Bureau, Company Statistics Division in Washington, D.C. at (301) 457-3320.

High-technology Definition: U.S. Department of Commerce.

High-technology Establishments: These data were prepared by the U.S. Census Bureau under contract with Taratec Corporation, Columbus, Ohio.

Total Establishments: U.S. Census Bureau. *County Business Patterns—United States: 2000*. (2002, May). <http://www.census.gov/prod/2002pubs/00cbp/cbp00-1.pdf> (2002, June 5).

Technology Administration

Percent of Establishments in High-technology NAICS Codes: 2000

STATE	Establishments in High-tech NAICS Codes	Total Establishments	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	4,208	99,817	4.2%	38	70
Alaska	783	18,501	4.2%	37	70
Arizona	7,493	114,804	6.5%	14	108
Arkansas	2,170	63,185	3.4%	45	57
California	60,799	799,863	7.6%	7	126
Colorado	11,361	137,528	8.3%	3	137
Connecticut	6,356	92,436	6.9%	10	114
Delaware	1,426	23,771	6.0%	18	99
Florida	25,873	428,438	6.0%	16	100
Georgia	13,110	200,442	6.5%	13	108
Hawaii	1,256	29,853	4.2%	39	70
Idaho	1,632	37,429	4.4%	33	72
Illinois	21,479	308,067	7.0%	9	115
Indiana	7,049	146,321	4.8%	29	80
Iowa	2,677	80,890	3.3%	46	55
Kansas	3,611	74,939	4.8%	28	80
Kentucky	3,491	89,921	3.9%	44	64
Louisiana	4,223	101,016	4.2%	40	69
Maine	1,708	39,466	4.3%	34	72
Maryland	10,030	128,467	7.8%	5	129
Massachusetts	14,598	176,222	8.3%	2	137
Michigan	13,255	236,912	5.6%	20	93
Minnesota	10,014	139,080	7.2%	8	119
Mississippi	1,866	59,788	3.1%	47	52
Missouri	6,667	144,755	4.6%	31	76
Montana	1,321	31,849	4.1%	41	69
Nebraska	1,955	49,623	3.9%	43	65
Nevada	3,233	48,178	6.7%	12	111
New Hampshire	2,874	37,414	7.7%	6	127
New Jersey	20,089	233,559	8.6%	1	142
New Mexico	2,227	42,782	5.2%	26	86
New York	27,507	492,073	5.6%	21	93
North Carolina	10,887	203,903	5.3%	24	88
North Dakota	606	20,139	3.0%	49	50
Ohio	14,566	270,509	5.4%	23	89
Oklahoma	3,810	85,094	4.5%	32	74
Oregon	5,693	100,645	5.7%	19	94
Pennsylvania	16,090	294,741	5.5%	22	90
Rhode Island	1,516	28,534	5.3%	25	88
South Carolina	4,119	97,146	4.2%	36	70
South Dakota	723	23,783	3.0%	48	50
Tennessee	5,561	130,876	4.2%	35	70
Texas	28,410	471,509	6.0%	17	100
Utah	3,750	55,379	6.8%	11	112
Vermont	1,109	21,564	5.1%	27	85
Virginia	14,015	175,582	8.0%	4	132
Washington	10,175	164,018	6.2%	15	103
West Virginia	1,224	41,047	3.0%	50	49
Wisconsin	6,655	140,415	4.7%	30	78
Wyoming	742	18,120	4.1%	42	68
50 States	**425,992**	**7,050,393**	**6.0%**	**—**	**100**
Dist of Columbia	2,069	19,655	10.5%	—	174
Puerto Rico	N/A	—	—	—	—

[1] (Establishments in High-tech NAICS Codes / Total Establishments) x 100%

[2] 100 equals 50-state indicator value

High-technology Employment

Definition

The percent of a state's employment in high-technology industries is found by dividing the employment in establishments classified in the 39 North American Industry Classification System (NAICS) codes identified by the U.S. Department of Commerce as high-technology by the total employment within the state. High-technology industries are those with employment in both research and development and in all technology-oriented occupations that accounts for a proportion of employment that is at least twice the average for all industries in the Occupational Employment Statistics Survey.

In 2000, there were 10,050,578 employees in the 50 states who were working in establishments classified in the 39 high-technology NAICS codes. This represents 8.8% of the 113,649,993 total employees in all 50 states in 2000, although for individual states the percentage ranged from 2.4% to 12.6% of total employment. The median percentage of total employment in high-technology establishments in the 50 states was 8.0%. The greatest concentrations of workers in high-tech industries can be found in the states of Michigan, Massachusetts, and Virginia.

Relevance

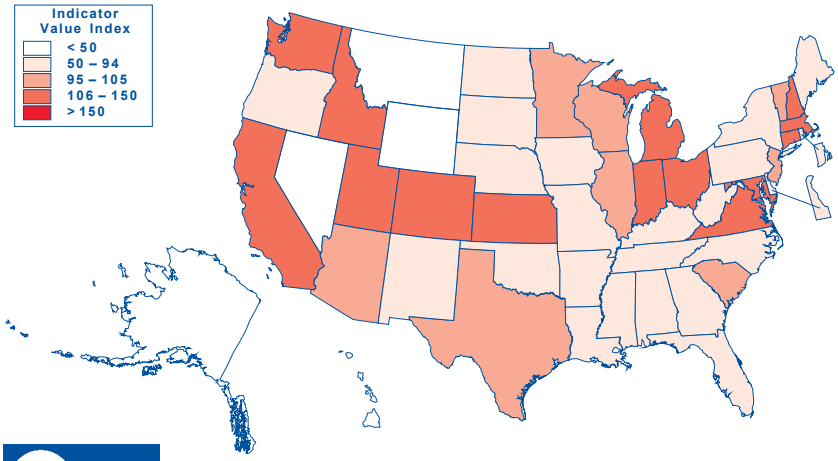
Like other metrics in this section, the percent of employment in establishments that are classified by high-technology NAICS codes helps to assess the technical orientation of the business base in the state.

The percentage of employment in the high-technology sector can be compared to the percentage of business establishments that are classified by high-technology NAICS codes. This comparison indicates if high-technology establishments employ more people than the average establishment. Economic development organizations can use this measure to generate information regarding the relative importance of high-technology to the mix of businesses in their state.

Data Considerations and Limitations

The U.S. Census Bureau provided these data from a special tabulation of employment counts by state for the aggregate of the 39 NAICS codes corresponding to high-technology industries. It was necessary to run a special tabulation because the data pertaining to some NAICS codes were suppressed for confidentiality reasons in *County Business Patterns, 2000*.

Data are suppressed when they will reveal establishment specific employment or payroll data, thereby violating the non-disclosure agreement between the establishment and the U.S. Census Bureau. This situation occurs when there are only a few businesses in a particular industry within the state or when the industry is dominated by a few large companies.



Source of Data

The U.S. Census Bureau furnished the data for this metric from a special tabulation based upon the 6.9 million employer-establishments contained in the Standard Statistical Establishment List. This is the same database that is used to generate *County Business Patterns*. Arrangements for special tabulations can be made by contacting Trey Cole at the U.S. Census Bureau, Company Statistics Division in Washington, D.C. at (301) 457-3320.

High-technology Definition: U.S. Department of Commerce.

High-technology Employment: These data were prepared by the U.S. Census Bureau under contract with Taratec Corporation, Columbus, Ohio.

Total Employment: U.S. Census Bureau. *County Business Patterns—United States: 2000*. (2002, May). <http://www.census.gov/prod/2002pubs/00cbp/cbp00-1.pdf> (2002, June 5).

Technology Administration

Percent of Employment in High-technology NAICS Codes: 2000

STATE	Employment in High-tech NAICS Codes	Total Employment	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	119,207	1,653,074	7.2%	35	82
Alaska	7,772	204,887	3.8%	48	43
Arizona	166,678	1,919,353	8.7%	21	98
Arkansas	64,564	990,830	6.5%	38	74
California	1,397,776	12,884,692	10.8%	6	123
Colorado	190,282	1,913,302	9.9%	9	112
Connecticut	166,788	1,546,250	10.8%	7	122
Delaware	29,208	377,277	7.7%	31	88
Florida	339,093	6,217,386	5.5%	44	62
Georgia	256,208	3,483,500	7.4%	34	83
Hawaii	10,292	432,092	2.4%	50	27
Idaho	43,356	450,788	9.6%	14	109
Illinois	491,433	5,501,036	8.9%	18	101
Indiana	302,599	2,650,774	11.4%	4	129
Iowa	101,015	1,265,064	8.0%	26	90
Kansas	116,476	1,128,732	10.3%	8	117
Kentucky	126,237	1,513,722	8.3%	23	94
Louisiana	89,305	1,592,357	5.6%	42	63
Maine	26,310	491,780	5.3%	45	60
Maryland	203,618	2,058,304	9.9%	10	112
Massachusetts	388,928	3,087,044	12.6%	2	142
Michigan	514,017	4,072,786	12.6%	1	143
Minnesota	210,453	2,395,361	8.8%	19	99
Mississippi	56,283	956,781	5.9%	41	67
Missouri	178,522	2,398,979	7.4%	33	84
Montana	12,256	296,220	4.1%	46	47
Nebraska	59,228	751,076	7.9%	28	89
Nevada	31,814	902,775	3.5%	49	40
New Hampshire	53,475	546,400	9.8%	11	111
New Jersey	322,935	3,548,429	9.1%	16	103
New Mexico	43,137	549,352	7.9%	29	89
New York	513,472	7,353,209	7.0%	37	79
North Carolina	268,284	3,385,492	7.9%	27	90
North Dakota	15,916	255,178	6.2%	39	71
Ohio	484,110	5,001,980	9.7%	13	109
Oklahoma	85,533	1,201,606	7.1%	36	80
Oregon	108,254	1,355,442	8.0%	25	90
Pennsylvania	394,786	5,087,237	7.8%	30	88
Rhode Island	24,809	415,168	6.0%	40	68
South Carolina	137,014	1,601,532	8.6%	22	97
South Dakota	23,346	306,704	7.6%	32	86
Tennessee	195,796	2,390,322	8.2%	24	93
Texas	703,206	8,026,438	8.8%	20	99
Utah	89,486	917,089	9.8%	12	110
Vermont	22,761	253,541	9.0%	17	102
Virginia	348,426	2,903,548	12.0%	3	136
Washington	258,234	2,267,485	11.4%	5	129
West Virginia	30,903	558,171	5.5%	43	63
Wisconsin	220,093	2,414,834	9.1%	15	103
Wyoming	6,884	174,614	3.9%	47	45
50 States	**10,050,578**	**113,649,993**	**8.8%**	**—**	**100**
Dist of Columbia	36,111	414,983	8.7%	—	98
Puerto Rico	N/A	—	—	—	—

[1] (Employment in High-tech NAICS Codes / Total Employment) x 100%

[2] 100 equals 50-state indicator value

High-technology Payroll

Definition

The percent of technology-intensive payroll within a state is calculated by dividing the payroll for the 39 North American Industry Classification System (NAICS) codes identified as high-technology by the U.S. Department of Commerce by the total payroll for all industries within the state. High-technology industries are those with employment in both research and development and in all technology-oriented occupations that account for a proportion of employment that is at least twice the average for all industries in the Occupational Employment Statistics Survey.

Relevance

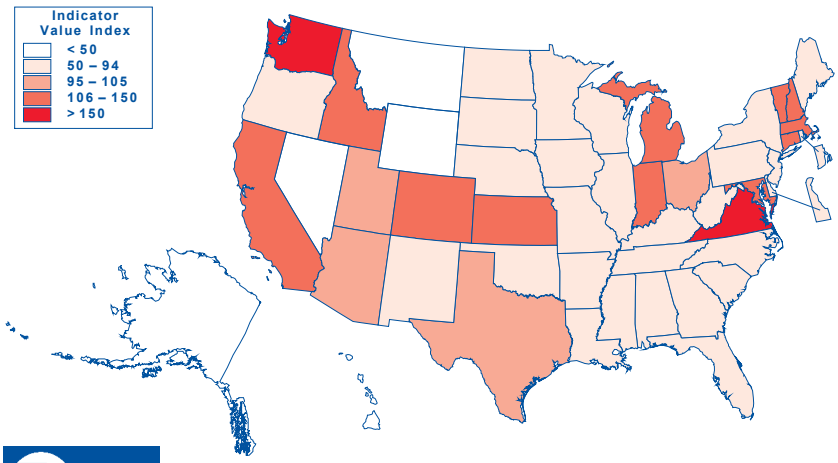
This metric is useful in assessing the relative compensation levels of jobs in high-technology industries. It is helpful to view this metric in conjunction with the previous metric, the percent of employment in high-technology industries. If high-technology industries are creating a high percentage of well-paying jobs, the percent of a state's payroll from those industries will be higher than the percent of employment in those industries. If a state is attracting or growing companies in high-technology industries without significantly growing the high-technology payroll, it is likely that higher paying jobs are not being created at the predicted rate, at which point some states might reassess their economic development strategies.

In 2000, there was $583 billion in payroll in the 50 states in establishments classified in the 39 NAICS codes for high-technology industries. This represents 15.1% of the $3,859 billion in total payroll for all 50 states in 2000 ranging from a high of 26.7% to a low of 4.3% for individual states. The median percentage of total payroll in high-technology establishments in the 50 states was 13.3%. The states with the largest percentage of their payroll from high-tech industries were Washington, Virginia, and Massachusetts. California had the largest high-tech payroll at $108 billion or 18.5% of the high-tech payroll for the nation.

Data Considerations and Limitations

The U.S. Census Bureau provided these data from a special tabulation of payroll counts by state for the aggregate of the NAICS codes corresponding to high-technology industries. It was necessary to run a special tabulation because the data pertaining to some NAICS codes were suppressed for confidentiality reasons in *County Business Patterns, 2000*.

Data are suppressed when they will reveal establishment specific employment or payroll data, thereby violating the non-disclosure agreement between the establishment and the U.S. Census Bureau. This situation occurs when there are only a few businesses in a particular industry within the state or when the industry is dominated by a few large companies.



Source of Data

The U.S. Census Bureau furnished the data for this metric from a special tabulation based upon the 6.9 million employer-establishments contained in the Standard Statistical Establishment List. This is the same database that is used to generate *County Business Patterns*. Arrangements for special tabulations can be made by contacting Trey Cole at the U.S. Census Bureau, Company Statistics Division in Washington, D.C. at (301) 457-3320.

High-technology Definition: U.S. Department of Commerce.

High-technology Payroll: These data were prepared by the U.S. Census Bureau under contract with Taratec Corporation, Columbus, Ohio.

Total Payroll: U.S. Census Bureau. *County Business Patterns—United States: 2000*. (2002, May). <http://www.census.gov/prod/2002pubs/00cbp/cbp00-1.pdf> (2002, June 5).

Technology Administration

Percent of Payroll in High-technology NAICS Codes: 2000

STATE	Payroll in High-tech NAICS Codes, thousands	Total Payroll, thousands	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	5,135,976	43,957,816	11.7%	33	77
Alaska	422,431	7,649,748	5.5%	49	37
Arizona	8,933,301	58,235,779	15.3%	14	102
Arkansas	2,219,145	24,663,335	9.0%	43	60
California	108,032,098	514,360,478	21.0%	4	139
Colorado	12,289,032	68,179,190	18.0%	7	119
Connecticut	10,857,314	67,384,810	16.1%	13	107
Delaware	1,731,245	14,320,011	12.1%	30	80
Florida	16,639,725	177,378,971	9.4%	40	62
Georgia	13,609,991	112,899,269	12.1%	31	80
Hawaii	526,404	12,331,233	4.3%	50	28
Idaho	2,453,602	12,395,973	19.8%	5	131
Illinois	27,124,927	201,319,268	13.5%	23	89
Indiana	13,682,211	78,992,813	17.3%	8	115
Iowa	4,032,473	33,752,570	11.9%	32	79
Kansas	5,262,741	31,990,762	16.5%	11	109
Kentucky	5,624,811	41,233,591	13.6%	21	90
Louisiana	4,579,154	42,975,159	10.7%	37	71
Maine	1,083,463	13,490,186	8.0%	45	53
Maryland	12,192,156	70,877,270	17.2%	9	114
Massachusetts	29,556,714	131,444,257	22.5%	3	149
Michigan	28,130,923	145,482,490	19.3%	6	128
Minnesota	10,795,802	82,483,852	13.1%	26	87
Mississippi	1,857,476	22,843,586	8.1%	44	54
Missouri	8,272,753	72,195,796	11.5%	35	76
Montana	449,221	6,808,075	6.6%	46	44
Nebraska	2,483,677	20,283,421	12.2%	29	81
Nevada	1,545,166	26,597,395	5.8%	47	38
New Hampshire	3,021,515	17,826,474	16.9%	10	112
New Jersey	20,824,844	147,082,234	14.2%	18	94
New Mexico	1,945,132	14,303,193	13.6%	22	90
New York	30,687,445	330,586,554	9.3%	41	61
North Carolina	12,287,147	99,687,306	12.3%	28	82
North Dakota	561,123	6,057,225	9.3%	42	61
Ohio	23,632,665	155,035,151	15.2%	16	101
Oklahoma	3,398,185	31,700,630	10.7%	36	71
Oregon	6,060,056	43,689,551	13.9%	19	92
Pennsylvania	21,732,120	165,108,376	13.2%	25	87
Rhode Island	1,199,073	12,585,945	9.5%	39	63
South Carolina	5,939,850	43,362,158	13.7%	20	91
South Dakota	846,792	7,296,364	11.6%	34	77
Tennessee	8,595,806	69,411,435	12.4%	27	82
Texas	40,658,632	269,917,800	15.1%	17	100
Utah	3,884,356	25,439,601	15.3%	15	101
Vermont	1,137,821	6,938,080	16.4%	12	109
Virginia	22,592,813	97,692,222	23.1%	2	153
Washington	23,465,320	87,746,294	26.7%	1	177
West Virginia	1,357,126	14,019,258	9.7%	38	64
Wisconsin	9,661,773	72,892,099	13.3%	24	88
Wyoming	263,427	4,540,493	5.8%	48	38
50 States	**583,276,953**	**3,859,445,547**	**15.1%**	**—**	**100**
Dist of Columbia	2,540,537	19,984,505	12.7%	—	84
Puerto Rico	N/A	—	—	—	—

[1] (Payroll in High-tech NAICS Codes / Total Payroll) x 100%

[2] 100 equals 50-state indicator value

High-technology Establishment Births

Definition

Establishment births are identified as employer establishments that did not exist according to the records of the Standard Statistical Establishment List housed at the U.S. Census Bureau during 1999 and came into existence at one geographic location and were placed on record during 2000. The percent of establishment births in high-technology industries was determined by dividing the total number of establishment births within the 39 high-technology North American Industry Classification System (NAICS) codes by the total number of establishment births in all industries within the state.

Relevance

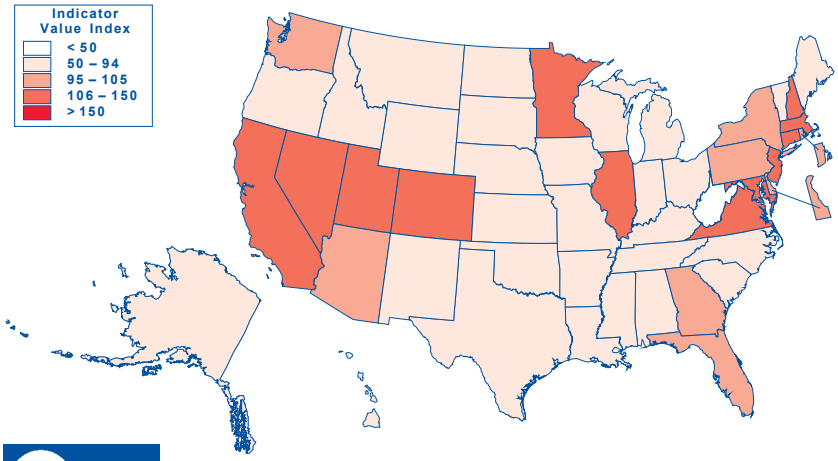
This metric provides an indication of the degree to which establishment births are concentrated in high-technology NAICS codes. States with high percentages of high-technology establishment births are making progress in shifting their business base toward the high-technology sector.

The number of high-technology establishment births and the number of total establishment births also provide useful information when they are normalized to the number of establishments within a state. The number of establishment births per 10,000 business establishments indicates how supportive the state's business climate is to the formation of new businesses and how strong the sense of entrepreneurship is in that state. Likewise, the number of high-technology establishment births per 10,000 business establishments indicates how supportive the state's business climate is to the formation of new high-technology businesses.

For the 50 states, there were 55,535 establishment births in the 39 high-technology NAICS codes out of 707,251 total births or 7.9%. For individual states, this value ranged from a high of 11.2% to a low of 3.7%. The median percentage of establishment births in high-technology NAICS codes for the 50 states was 6.8%. The states with the greatest concentration of establishment births in high-technology industries were Virginia, Massachusetts, and Maryland, while the largest number of high-tech establishment births, nearly 9,000, took place in California.

Data Considerations and Limitations

The U.S. Census Bureau defines an establishment as a single physical location at which business is conducted. An establishment is not necessarily identical to a company, because a company can consist of one or more establishments. For an establishment to be counted as a birth during 2000 it must be a new operation at a new physical location, employing one or more full or part-time paid employees at that location. It must also have had an Employer Identification Number (EIN) assigned by the IRS. Only when an establishment, as defined above, did not exist in 1999 and did exist in 2000 is it counted as a birth.



Source of Data

The U.S. Census Bureau furnished the data for this metric from a special tabulation based upon the 6.9 million employer-establishments contained in the Standard Statistical Establishment List. This is the same database that is used to generate *County Business Patterns*. Arrangements for special tabulations can be made by contacting Trey Cole at the U.S. Census Bureau, Company Statistics Division in Washington, D.C. at (301) 457-3320.

High-technology Definition: U.S. Department of Commerce.

High-technology and Total Establishment Births: These data were prepared by the U.S. Census Bureau under contract with Taratec Corporation, Columbus, Ohio.

Total Establishments: U.S. *Census Bureau. County Business Patterns—United States: 2000*. (2002, May). <http://www.census.gov/prod/2002pubs/00cbp/cbp00-1.pdf> (2002, June 5).

Technology Administration

Percent of Establishment Births in High-technology NAICS Codes: 2000

STATE	Establishment Births in High-tech NAICS Codes	Total Establishment Births	Total Establishments	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	516	9,587	99,817	5.4%	36	69
Alaska	89	1,866	18,501	4.8%	44	61
Arizona	1,081	13,898	114,804	7.8%	16	99
Arkansas	259	6,487	63,185	4.0%	49	51
California	8,897	88,014	799,863	10.1%	6	129
Colorado	1,652	16,079	137,528	10.3%	5	131
Connecticut	694	7,880	92,436	8.8%	10	112
Delaware	220	2,793	23,771	7.9%	14	100
Florida	3,749	50,358	428,438	7.4%	20	95
Georgia	1,904	22,994	200,442	8.3%	13	105
Hawaii	155	2,702	29,853	5.7%	33	73
Idaho	239	4,050	37,429	5.9%	31	75
Illinois	2,498	28,374	308,067	8.8%	11	112
Indiana	766	12,917	146,321	5.9%	30	76
Iowa	295	6,377	80,890	4.6%	46	59
Kansas	467	6,995	74,939	6.7%	27	85
Kentucky	413	8,286	89,921	5.0%	42	63
Louisiana	483	9,661	101,016	5.0%	41	64
Maine	231	3,692	39,466	6.3%	28	80
Maryland	1,342	12,532	128,467	10.7%	3	136
Massachusetts	1,868	17,233	176,222	10.8%	2	138
Michigan	1,505	21,067	236,912	7.1%	22	91
Minnesota	1,224	12,365	139,080	9.9%	7	126
Mississippi	236	5,796	59,788	4.1%	48	52
Missouri	809	14,082	144,755	5.7%	32	73
Montana	184	3,227	31,849	5.7%	34	73
Nebraska	224	4,307	49,623	5.2%	39	66
Nevada	583	6,673	48,178	8.7%	12	111
New Hampshire	323	3,431	37,414	9.4%	8	120
New Jersey	2,456	23,132	233,559	10.6%	4	135
New Mexico	275	4,450	42,782	6.2%	29	79
New York	3,689	48,396	492,073	7.6%	17	97
North Carolina	1,373	20,207	203,903	6.8%	25	87
North Dakota	63	1,470	20,139	4.3%	47	55
Ohio	1,530	22,724	270,509	6.7%	26	86
Oklahoma	405	8,458	85,094	4.8%	43	61
Oregon	733	10,270	100,645	7.1%	23	91
Pennsylvania	1,871	24,816	294,741	7.5%	19	96
Rhode Island	190	2,510	28,534	7.6%	18	96
South Carolina	507	9,907	97,146	5.1%	40	65
South Dakota	97	2,057	23,783	4.7%	45	60
Tennessee	668	12,822	130,876	5.2%	38	66
Texas	3,816	51,427	471,509	7.4%	21	94
Utah	598	6,706	55,379	8.9%	9	114
Vermont	131	1,838	21,564	7.1%	24	91
Virginia	1,973	17,614	175,582	11.2%	1	143
Washington	1,383	17,678	164,018	7.8%	15	100
West Virginia	131	3,540	41,047	3.7%	50	47
Wisconsin	646	11,752	140,415	5.5%	35	70
Wyoming	94	1,754	18,120	5.4%	37	68
50 States	**55,535**	**707,251**	**7,050,393**	**7.9%**	**—**	**100**
Dist of Columbia	265	1,828	19,655	14.5%	—	185
Puerto Rico	N/A	N/A	—	—	—	—

[1] (Establishment Births in High-tech NAICS Codes / Total Establishment Births) x 100%

[2] 100 equals 50-state indicator value

Net High-technology Business Formations

Definition

In this metric, net high-technology establishment formations are equal to the number of establishments, classified in one of the 39 North American Industry Classification System (NAICS) codes defined as high-technology by the U.S. Department of Commerce, that began operations in 2000 minus the number of establishments in the same set of NAICS codes that ceased operations during the same year. The net high-technology establishment formations were normalized to the total number of business establishments in the state to eliminate the scale sensitivity.

Relevance

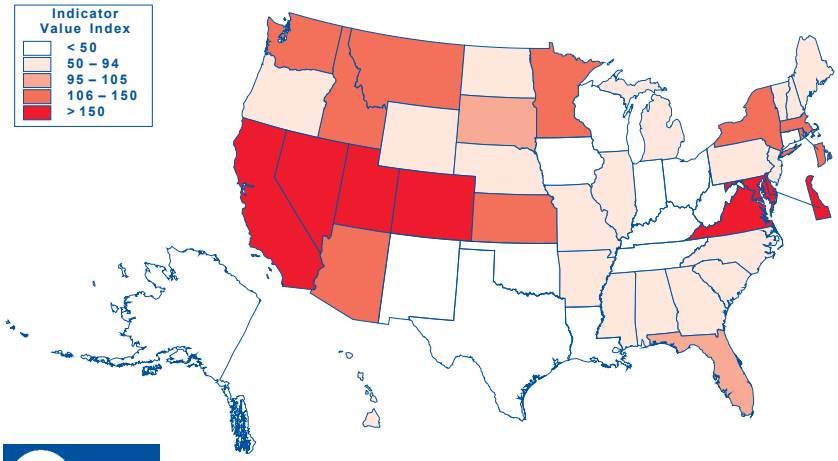
This metric provides a measure of the state's ability to create and sustain formation of new high-technology businesses. Net formation of high-technology establishments was positive for 47 states indicating that, in 2000, technology intensive establishments were being formed faster than they were dying across most of the nation. The ratio of net establishment formations in high-technology NAICS codes to the number of establishments in the state provides a measure of the progress that a state is making in adding to its high-technology sector.

For the 50 states, there were 55,535 establishment births and 45,872 establishment deaths in the 39 high-technology NAICS codes for a net gain of 9,663 establishments. This equates to a net formation of 13.7 high-technology establishments per 10,000 business establishments nationwide although it ranged from a high of 31.8 to a low of -3.2 (a net loss) for individual states. The median net number of high-technology establishment formations per 10,000 business establishments in the 50 states was 10.0. The states with the greatest net formation of new high-technology businesses relative to the size of their business base in 2000 were Nevada, Virginia, and California. California also had the largest number of net high-technology formations with 2,452 business establishments.

Data Considerations and Limitations

The U.S. Census Bureau defines an establishment as a single physical location at which business is conducted. An establishment is not necessarily identical to a company because a company can consist of one or more establishments. For an establishment formation to be counted during 2000, a company must have begun conducting operations in 2000 at an entirely new physical location (not a relocation). Changes in company name, ownership, or address that occur during the year are not counted as formations because the new and old Employer Identification Numbers (EINs) are linked in the U.S. Census Bureau records. Similarly, for a death to be counted during 2000, the company must have been conducting operations at its location in 1999 with one or more full or part-time paid employees and ceased all operations at its location and not resumed any operations at any new physical location during 2000. It must have also had an EIN assigned by the IRS during 1999. Only when an establishment, as defined above, did exist in 1999 and did not exist in 2000 is it counted as a death.

Caution must be exercised in interpreting this metric. The data represent only the events from a single year and are subject to year-to-year variability. In states with only a small business base, small fluctuations can cause a dramatic shift in this metric's value.



Source of Data

The U.S. Census Bureau furnished the data for this metric from a special tabulation based upon the 6.9 million employer-establishments contained in the Standard Statistical Establishment List. This is the same database that is used to generate *County Business Patterns*. Arrangements for special tabulations can be made by contacting Trey Cole at the U.S. Census Bureau, Company Statistics Division in Washington, D.C. at (301) 457-3320.

High-technology Definition: U.S. Department of Commerce.

High-technology Establishment Births and Deaths: These data were prepared by the U.S. Census Bureau under contract with Taratec Corporation, Columbus, Ohio.

Total Establishments: U.S. Census Bureau. *County Business Patterns—United States: 2000*. (2002, May). <http://www.census.gov/prod/2002pubs/00cbp/cbp00-1.pdf> (2002, June 5).

Technology Administration

Net Formations of High-technology Establishments per 10,000 Business Establishments: 2000

STATE	Estab Births in High-tech NAICS Codes	Estab Deaths in High-tech NAICS Codes	Net Formations	Total Establishments	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	516	424	92	99,817	9.2	28	67
Alaska	89	95	-6	18,501	-3.2	50	-24
Arizona	1,081	871	210	114,804	18.3	9	133
Arkansas	259	213	46	63,185	7.3	34	53
California	8,897	6,445	2,452	799,863	30.7	3	224
Colorado	1,652	1,274	378	137,528	27.5	5	201
Connecticut	694	688	6	92,436	0.6	47	5
Delaware	220	165	55	23,771	23.1	6	169
Florida	3,749	3,154	595	428,438	13.9	17	101
Georgia	1,904	1,658	246	200,442	12.3	21	90
Hawaii	155	123	32	29,853	10.7	23	78
Idaho	239	173	66	37,429	17.6	10	129
Illinois	2,498	2,250	248	308,067	8.1	32	59
Indiana	766	680	86	146,321	5.9	40	43
Iowa	295	260	35	80,890	4.3	44	32
Kansas	467	351	116	74,939	15.5	15	113
Kentucky	413	385	28	89,921	3.1	46	23
Louisiana	483	436	47	101,016	4.7	43	34
Maine	231	180	51	39,466	12.9	19	94
Maryland	1,342	1,072	270	128,467	21.0	7	153
Massachusetts	1,868	1,568	300	176,222	17.0	12	124
Michigan	1,505	1,309	196	236,912	8.3	31	60
Minnesota	1,224	1,006	218	139,080	15.7	14	114
Mississippi	236	180	56	59,788	9.4	27	68
Missouri	809	708	101	144,755	7.0	36	51
Montana	184	121	63	31,849	19.8	8	144
Nebraska	224	190	34	49,623	6.9	37	50
Nevada	583	430	153	48,178	31.8	1	232
New Hampshire	323	292	31	37,414	8.3	30	60
New Jersey	2,456	2,166	290	233,559	12.4	20	91
New Mexico	275	249	26	42,782	6.1	39	44
New York	3,689	2,848	841	492,073	17.1	11	125
North Carolina	1,373	1,135	238	203,903	11.7	22	85
North Dakota	63	43	20	20,139	9.9	26	72
Ohio	1,530	1,401	129	270,509	4.8	42	35
Oklahoma	405	430	-25	85,094	-2.9	49	-21
Oregon	733	631	102	100,645	10.1	25	74
Pennsylvania	1,871	1,614	257	294,741	8.7	29	64
Rhode Island	190	144	46	28,534	16.1	13	118
South Carolina	507	437	70	97,146	7.2	35	53
South Dakota	97	64	33	23,783	13.9	18	101
Tennessee	668	599	69	130,876	5.3	41	38
Texas	3,816	3,510	306	471,509	6.5	38	47
Utah	598	431	167	55,379	30.2	4	220
Vermont	131	109	22	21,564	10.2	24	74
Virginia	1,973	1,423	550	175,582	31.3	2	229
Washington	1,383	1,130	253	164,018	15.4	16	113
West Virginia	131	135	-4	41,047	-1.0	48	-7
Wisconsin	646	592	54	140,415	3.8	45	28
Wyoming	94	80	14	18,120	7.7	33	56
50 States	**55,535**	**45,872**	**9,663**	**7,050,393**	**13.7**	**—**	**100**
Dist of Columbia	265	187	78	19,655	39.7	—	290
Puerto Rico	N/A	N/A	N/A	—	—	—	—

[1] [(Establishment Births in High-tech NAICS Codes - Establishment Deaths in High-tech NAICS Codes) / Total Establishments] x 10,000

[2] 100 equals 50-state indicator value

U.S. Patents

Definition

This metric is based upon a count of the average number of U.S. patents of U.S. origin issued during the three-year period of 2000–2002. The average number of U.S. patents was used to minimize year-to-year variability. Patents were classified according to the state of residence of the first-named inventor. The data were normalized to the number of businesses located within each state in 2001, the middle year of the 3-year period, to facilitate state-to-state comparisons of the intensity of patent activity.

Relevance

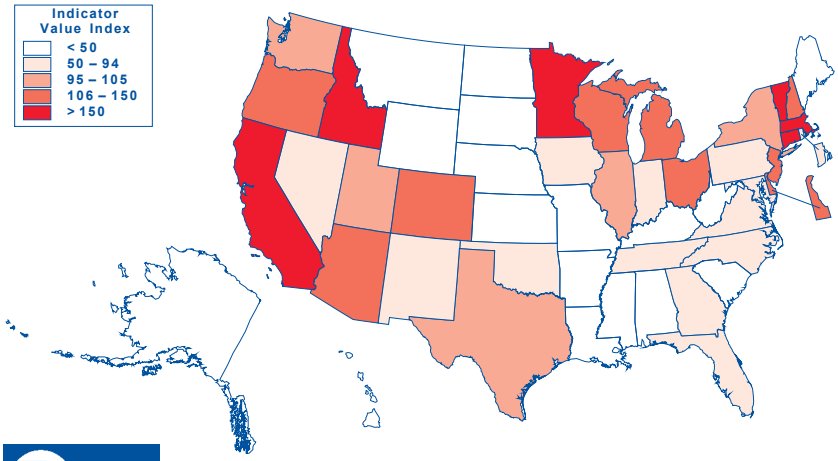
A patent for an invention is the grant of a property right to the inventor that is issued by the Patent and Trademark Office for a period of 20 years from the date on which the application was filed in the U.S., subject to the payment of maintenance fees. The level of patent activity is one measure of the amount of intellectual property being created within a state. Other types of intellectual property include trade secrets and know-how, but these sources are more difficult to measure.

For the 50 states, there were on average a total of 97,507 patents issued each year from 2000 to 2002. This results in a national average of 138 patents per 10,000 business establishments. In the 50 states, the median number of patents issued per 10,000 business establishments was 99, but the range was broad and extended from 30 to 463 patents per 10,000 establishments. The states of Idaho, California, and Vermont showed the greatest intensity of patent activity relative to the size of their business base.

Data Considerations and Limitations

These data are likely to contain a bias toward states that host the central R&D activities of large corporations with multiple operational sites or major government research centers. If an organization patents prolifically, the vast majority of its patents may be credited to the state where the majority of its researchers reside while the competitive advantage of the intellectual property created by those patents may be practiced and may create value elsewhere.

States with a high concentration of research universities may generate patents that are not reduced to commercial practice if the university does not have an active licensing program.



Source of Data

U.S. Patents Issued: U.S. Patent and Trademark Office, Office of Electronic Information Products/ PTMD, Dozier, G. (2003, April). *Patent Counts by Country/State and Year, All Patents, All Types, January 1, 1977—December 31, 2002.*

Establishments: U.S. Census Bureau. *County Business Patterns—United States: 2001*. (2003, April). <http://www.census.gov/prod/2003pubs/01cbp/cbp01-1.pdf> (2003, October 6); U.S. Census Bureau. *County Business Patterns—Puerto Rico: 2001*. (2003, May). <http://www.census.gov/prod/2003pubs/01cbp/cbp01-53.pdf> (2003, October 6)

Technology Administration

Average Annual Number of U.S. Patents Issued per 10,000 Business Establishments: 2000–2002

STATE	Average Annual Patents	2001 Establishments	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	430	99,261	43	42	31
Alaska	55	18,589	30	50	21
Arizona	1,719	116,304	148	15	107
Arkansas	228	62,725	36	46	26
California	20,647	806,733	256	2	186
Colorado	2,105	139,225	151	13	110
Connecticut	2,049	92,105	222	4	161
Delaware	413	24,074	171	10	124
Florida	3,044	434,583	70	32	51
Georgia	1,558	202,505	77	29	56
Hawaii	97	30,175	32	49	23
Idaho	1,743	37,622	463	1	336
Illinois	4,241	307,356	138	18	100
Indiana	1,680	145,580	115	24	84
Iowa	724	80,392	90	26	65
Kansas	453	74,565	61	36	44
Kentucky	520	89,501	58	37	42
Louisiana	542	100,780	54	38	39
Maine	158	39,650	40	44	29
Maryland	1,578	129,301	122	22	89
Massachusetts	3,883	177,434	219	5	159
Michigan	4,194	236,711	177	9	129
Minnesota	2,965	140,968	210	6	153
Mississippi	206	59,056	35	47	25
Missouri	966	144,071	67	35	49
Montana	153	32,294	47	41	34
Nebraska	266	49,710	54	39	39
Nevada	382	48,863	78	28	57
New Hampshire	669	37,312	179	8	130
New Jersey	4,261	234,558	182	7	132
New Mexico	375	42,686	88	27	64
New York	7,097	493,863	144	16	104
North Carolina	2,202	204,075	108	25	78
North Dakota	97	20,206	48	40	35
Ohio	3,999	269,944	148	14	107
Oklahoma	589	85,276	69	33	50
Oregon	1,561	101,003	155	11	112
Pennsylvania	3,829	295,096	130	21	94
Rhode Island	345	28,539	121	23	88
South Carolina	661	97,030	68	34	49
South Dakota	91	24,032	38	45	27
Tennessee	976	129,659	75	30	55
Texas	6,632	473,868	140	17	102
Utah	780	56,851	137	19	100
Vermont	477	21,449	223	3	161
Virginia	1,290	176,532	73	31	53
Washington	2,202	164,072	134	20	97
West Virginia	162	40,439	40	43	29
Wisconsin	2,150	140,540	153	12	111
Wyoming	62	18,453	34	48	25
50 States	**97,507**	**7,075,616**	**138**	**—**	**100**
Dist of Columbia	68	19,686	34	—	25
Puerto Rico	22	44,372	5	—	4

[1] (Average Annual Patents / 2001 Establishments) x 10,000

[2] 100 equals 50-state indicator value

Technology Fast 500 Companies

Definition

The 2002 Deloitte & Touche Technology Fast 500 ranks the fastest growing U.S. technology companies over a five-year period. Companies qualify as technology companies if they produce technology, manufacture a technology-related product, are technology intensive, or devote a high percentage of effort to R&D. Companies are ranked based upon their revenue growth between 1997 and 2002.

Companies can be nominated for consideration by winning one of the 22 regional U.S. and Canadian Fast 50 programs, by submitting a nomination directly, or by public company database research. To be eligible, a company must have annual 1997 revenues of at least $50,000 and must be headquartered in the U.S. or Canada. It must also have been in business during the entire period extending from 1997–2002.

From the Technology Fast 500 list of companies, the number of companies headquartered in each state was counted and normalized to the number of business establishments in that state. Comparisons were then possible between states.

Relevance

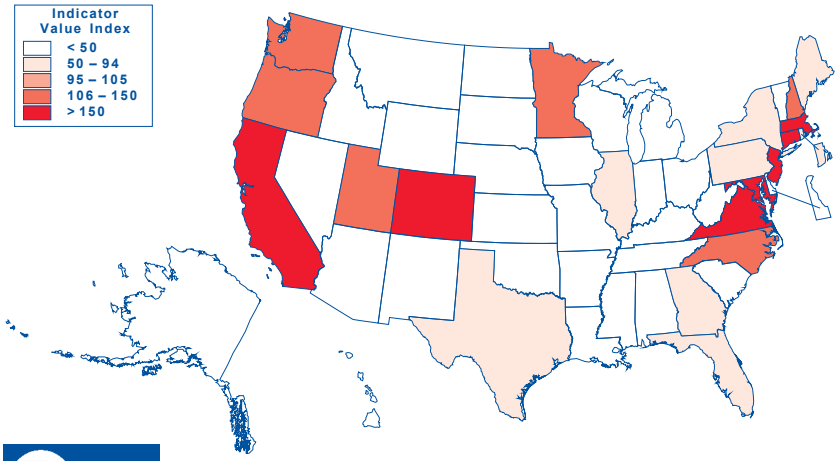
Technology has become a key ingredient of economic development, and the Fast 500 program was created in 1995 to recognize fast-growing technology companies. The 2002 list, the eighth in the series, provides a picture of where the fastest growing technology companies are being created and where the highest concentrations of them exist. Of the 500 companies included in the 2002 list, 448 were located in the United States and 52 were located in Canada.

In 2002, there was an average of 0.63 Technology Fast 500 Companies per 10,000 business establishments throughout the U.S. The 50-state median number of Technology Fast 500 Companies per 10,000 business establishments was 0.21 indicating that many of these fast-growing companies are concentrated in a few states. The states with the highest concentration of these fast-growing companies in their business bases are California, Massachusetts, and New Jersey. California is home to 151 or 30% of the companies on this list.

Forty-eight percent of the companies on the 2002 list were from the Software industry. Companies in the Life Sciences industry made up 16% of the 2002 list while Communications and Networking companies accounted for 15%. Other industries with significant numbers of fast-growing technology companies included Internet (10%), Semiconductor and Electronics (7%), and Computer and Peripherals (4%).

Data Considerations and Limitations

Both public and private companies are included on the list, although only the private companies, or another entity working on their behalf, are required to initiate their own nominations. This could produce a bias toward public technology companies in the final list.



Source of Data

The most recent list of Deloitte & Touche list of Technology Fast 500 companies can be found on the web at <http://www.public.deloitte.com/fast500/who_are_fast_500/search/company_search.asp>.

Technology Fast 500 Companies: Deloitte & Touche. Technology Fast 500. <http://www.public.deloitte.com/fast500/>. (2003, August 6).

Establishments: U.S. Census Bureau. *County Business Patterns—United States: 2001*. (2003, April). <http://www.census.gov/prod/2003pubs/01cbp/cbp01-1.pdf> (2003, October 6); U.S. Census Bureau. *County Business Patterns—Puerto Rico: 2001*. (2003, May). <http://www.census.gov/prod/2003pubs/01cbp/cbp01-53.pdf> (2003, October 6).

Technology Administration

Number of Technology Fast 500 Companies per 10,000 Business Establishments: 2002

STATE	2002 Fast 500 Companies	2001 Establishments	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	2	99,261	0.20	28	32
Alaska	0	18,589	0.00	34	0
Arizona	0	116,304	0.00	34	0
Arkansas	0	62,725	0.00	34	0
California	151	806,733	1.87	1	296
Colorado	14	139,225	1.01	7	159
Connecticut	10	92,105	1.09	6	171
Delaware	0	24,074	0.00	34	0
Florida	18	434,583	0.41	18	65
Georgia	8	202,505	0.40	19	62
Hawaii	0	30,175	0.00	34	0
Idaho	1	37,622	0.27	23	42
Illinois	11	307,356	0.36	20	57
Indiana	1	145,580	0.07	31	11
Iowa	0	80,392	0.00	34	0
Kansas	2	74,565	0.27	22	42
Kentucky	0	89,501	0.00	34	0
Louisiana	0	100,780	0.00	34	0
Maine	2	39,650	0.50	14	80
Maryland	15	129,301	1.16	5	183
Massachusetts	28	177,434	1.58	2	249
Michigan	1	236,711	0.04	32	7
Minnesota	13	140,968	0.92	8	146
Mississippi	0	59,056	0.00	34	0
Missouri	3	144,071	0.21	26	33
Montana	0	32,294	0.00	34	0
Nebraska	0	49,710	0.00	34	0
Nevada	1	48,863	0.20	27	32
New Hampshire	3	37,312	0.80	11	127
New Jersey	33	234,558	1.41	3	222
New Mexico	1	42,686	0.23	24	37
New York	24	493,863	0.49	15	77
North Carolina	15	204,075	0.74	12	116
North Dakota	0	20,206	0.00	34	0
Ohio	1	269,944	0.04	33	6
Oklahoma	1	85,276	0.12	29	19
Oregon	9	101,003	0.89	10	141
Pennsylvania	13	295,096	0.44	17	70
Rhode Island	1	28,539	0.35	21	55
South Carolina	0	97,030	0.00	34	0
South Dakota	0	24,032	0.00	34	0
Tennessee	1	129,659	0.08	30	12
Texas	21	473,868	0.44	16	70
Utah	4	56,851	0.70	13	111
Vermont	0	21,449	0.00	34	0
Virginia	22	176,532	1.25	4	197
Washington	15	164,072	0.91	9	144
West Virginia	0	40,439	0.00	34	0
Wisconsin	3	140,540	0.21	25	34
Wyoming	0	18,453	0.00	34	0
50 States	**448**	**7,075,616**	**0.63**	**—**	**100**
Dist of Columbia	0	19,686	0.00	—	0
Puerto Rico	0	44,372	0.00	—	0

[1] (2002 Fast 500 Companies / 2001 Establishments) x 10,000

[2] 100 equals 50-state indicator value

Inc. 500 Companies

Definition

Inc. publishes an annual list of 500 independent and privately held companies that are ranked on their revenue growth over the last five years. To be included in this list, a company must apply to *Inc.* and must provide tax forms or financial statements prepared by an independent accountant showing its annual revenues during fiscal years 1997–2001. Minimum sales in fiscal 1997 must be at least $200,000. Ranking is determined solely by net sales growth; profitability is not a factor. Non-profits are eligible for this list, but public companies, holding companies, regulated banks, and utilities are not.

From the *Inc.* list of 500 companies, the number of companies in each state was identified. This number was normalized by the number of business establishments in each state to correct for differences in the size of the business base of each state. The resulting metric, the number of Inc. 500 companies in 2002 per 10,000 business establishments, allowed comparisons between the states.

Relevance

The *Inc.* 500 list provides a picture of where the fastest growing, privately held companies are being created. Normalizing the count by state to the size of the state's business base provides insight as to where the highest concentrations of fast-growing businesses are located.

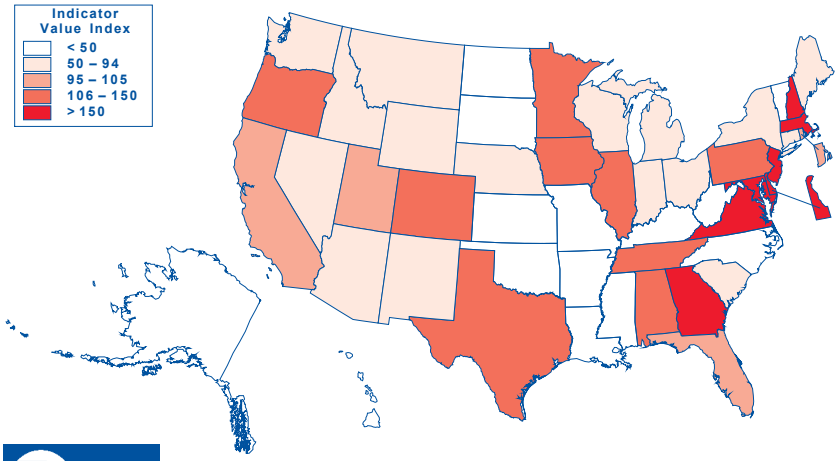
In 2002, there was an average of 0.70 *Inc.* 500 Companies per 10,000 business establishments. The 50-state median number of Inc. 500 Companies per 10,000 business establishments was 0.55.

The companies on this list had average 2001 sales of nearly $25 million with an average five-year growth rate of 1521%. They averaged 8 years in business and 160 employees. 73% of the companies on the list were profitable and 33% made last year's list as well.

Data Considerations and Limitations

Companies on the *Inc.* 500 list had to apply for the ranking, making this process subject to self-selection rather than being an objective independent assessment. There are a number of factors that may have influenced a company's decision to participate. Companies on the list may have been more aware of and more interested in the ranking than those who were equally qualified but failed to apply. Regional differences in the perceived importance of the list may also exist. Companies in different industries may place different degrees of emphasis on the value of participating. Finally, some private companies may not wish to publicly release their annual sales data while others consider the process a useful step toward an eventual IPO.

It should be noted that corporate registration requirements might affect where a company is registered. The state of registration may not reflect the state(s) where the majority of its business activities take place.



Source of Data

The 2002 listing of *Inc.* 500 companies can be found in textural form in the October 15, 2002 issue of *Inc. Magazine*. It is available electronically at <http://www.inc.com/inc500/>.

2002 *Inc.* 500 Companies: *Inc. Magazine*. (2002). *The Inc. 500*. <http://www.inc.com/inc500> (2003, June 3).

Establishments: U.S. Census Bureau. *County Business Patterns—United States: 2001*. (2003, April). <http://www.census.gov/prod/2003pubs/01cbp/cbp01-1.pdf> (2003, October 6); U.S. Census Bureau. *County Business Patterns—Puerto Rico: 2001*. (2003, May). <http://www.census.gov/prod/2003pubs/01cbp/cbp01-53.pdf> (2003, October 6).

Technology Administration

Number of Inc. 500 Companies per 10,000 Business Establishments: 2002

STATE	2002 Inc. 500 Companies	2001 Establishments	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	8	99,261	0.81	14	115
Alaska	0	18,589	0.00	45	0
Arizona	7	116,304	0.60	22	86
Arkansas	2	62,725	0.32	38	45
California	58	806,733	0.72	17	102
Colorado	14	139,225	1.01	8	143
Connecticut	4	92,105	0.43	30	62
Delaware	4	24,074	1.66	1	237
Florida	31	434,583	0.71	18	102
Georgia	25	202,505	1.23	4	176
Hawaii	0	30,175	0.00	45	0
Idaho	2	37,622	0.53	27	76
Illinois	26	307,356	0.85	12	120
Indiana	8	145,580	0.55	25	78
Iowa	6	80,392	0.75	16	106
Kansas	1	74,565	0.13	43	19
Kentucky	2	89,501	0.22	40	32
Louisiana	2	100,780	0.20	42	28
Maine	2	39,650	0.50	28	72
Maryland	18	129,301	1.39	3	198
Massachusetts	21	177,434	1.18	5	168
Michigan	10	236,711	0.42	32	60
Minnesota	14	140,968	0.99	9	141
Mississippi	2	59,056	0.34	37	48
Missouri	3	144,071	0.21	41	30
Montana	2	32,294	0.62	21	88
Nebraska	2	49,710	0.40	35	57
Nevada	2	48,863	0.41	34	58
New Hampshire	4	37,312	1.07	6	153
New Jersey	25	234,558	1.07	7	152
New Mexico	2	42,686	0.47	29	67
New York	28	493,863	0.57	24	81
North Carolina	6	204,075	0.29	39	42
North Dakota	0	20,206	0.00	45	0
Ohio	16	269,944	0.59	23	84
Oklahoma	1	85,276	0.12	44	17
Oregon	8	101,003	0.79	15	113
Pennsylvania	24	295,096	0.81	13	116
Rhode Island	2	28,539	0.70	20	100
South Carolina	4	97,030	0.41	33	59
South Dakota	0	24,032	0.00	45	0
Tennessee	11	129,659	0.85	11	121
Texas	47	473,868	0.99	10	141
Utah	4	56,851	0.70	19	100
Vermont	0	21,449	0.00	45	0
Virginia	26	176,532	1.47	2	210
Washington	6	164,072	0.37	36	52
West Virginia	0	40,439	0.00	45	0
Wisconsin	6	140,540	0.43	31	61
Wyoming	1	18,453	0.54	26	77
50 States	**497**	**7,075,616**	**0.70**	**—**	**100**
Dist of Columbia	3	19,686	1.52	—	217
Puerto Rico	0	44,372	0.00	—	0

[1] (2002 Inc. 500 Companies / 2001 Establishments) x 10,000

[2] 100 equals 50-state indicator value

Average Annual Pay

Definition

The average annual pay for a state is computed by dividing the total annual pay of covered employees in that state by the average monthly number of workers. All workers covered by Unemployment Insurance and Unemployment Compensation for Federal Employees programs are included. Workers in the following categories are not included: agricultural workers on small farms, members of the Armed Forces, elected officials in most states, most employees of railroads, some domestic workers, most student workers at schools, and employees of certain small non-profit organizations. Annual pay includes bonuses, the cash value of meals, lodging when supplied, tips and other gratuities, and, in some states, employer contributions to 401(k) plans and stock options. Special situations, such as the ratio of part-time to full-time employment or the ratio of high-paying to low-paying jobs, will affect the average annual pay for a state.

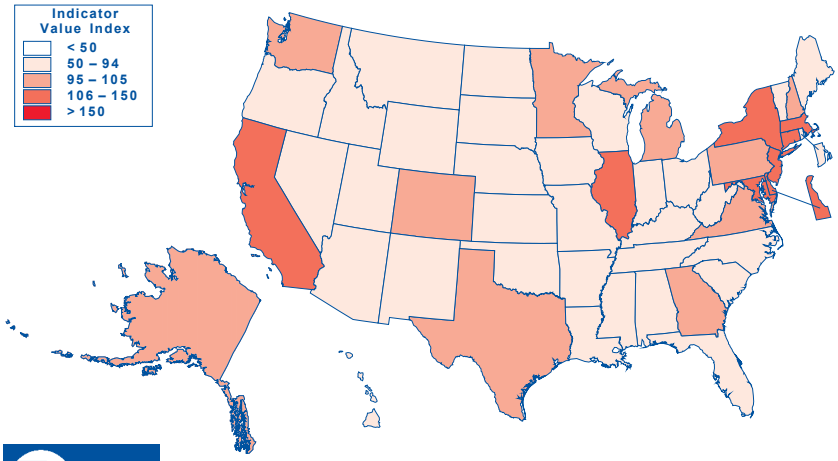
Relevance

This metric reflects how well paid people are for the work they do. It is directly tied to the availability of high-paying jobs. The national average pay per job in 2001 was $36,214. The 50-state median for average earnings per job was $31,902.

In the private sector, jobs in management and in utilities had the highest average annual pay levels at $69,069 and $65,582, respectively in 2001. The retail sector recorded the lowest pay at $22,670 due in part to the high percentage of part-time employment. In the public sector, the average annual pay was $36,510 in 2001. The jobs showing the largest increase in average salaries between 2000 and 2001 were administrative and waste services, each with increases of 5.9%, and finance and insurance, each with increases of 4.9%.

Data Considerations and Limitations

Salary data reflect state of employment rather than state of residence, potentially distorting their meaning for smaller states where a high percentage of the population may live in one state and work in another. The 2001 data are preliminary and subject to revision.



Source of Data

Average Annual Earnings Per Job: U.S. Department of Labor, Bureau of Labor Statistics. *Average Annual Pay by State and Industry, 2001.* <ftp://ftp.bls.gov/pub/news.release/History/annpay.09242002.news> (2003, June 3).

Technology Administration

Average Annual Pay per Worker: 2001

STATE	INDICATOR VALUE	Rank	Indicator Value Index [1]
Alabama	$30,090	33	83
Alaska	$36,140	14	100
Arizona	$33,408	20	92
Arkansas	$27,258	46	75
California	$41,358	5	114
Colorado	$37,950	9	105
Connecticut	$46,963	1	130
Delaware	$38,434	7	106
Florida	$31,551	28	87
Georgia	$35,114	17	97
Hawaii	$31,250	30	86
Idaho	$27,765	45	77
Illinois	$39,058	6	108
Indiana	$31,778	26	88
Iowa	$28,840	38	80
Kansas	$30,153	32	83
Kentucky	$30,017	35	83
Louisiana	$29,134	37	80
Maine	$28,815	39	80
Maryland	$38,237	8	106
Massachusetts	$44,976	3	124
Michigan	$37,387	11	103
Minnesota	$36,585	13	101
Mississippi	$25,919	47	72
Missouri	$32,422	24	90
Montana	$25,194	50	70
Nebraska	$28,375	41	78
Nevada	$33,122	23	91
New Hampshire	$35,479	16	98
New Jersey	$44,285	4	122
New Mexico	$28,698	40	79
New York	$46,664	2	129
North Carolina	$32,026	25	88
North Dakota	$25,707	48	71
Ohio	$33,280	21	92
Oklahoma	$28,020	43	77
Oregon	$33,203	22	92
Pennsylvania	$34,976	18	97
Rhode Island	$33,592	19	93
South Carolina	$29,253	36	81
South Dakota	$25,600	49	71
Tennessee	$31,491	29	87
Texas	$36,039	15	100
Utah	$30,074	34	83
Vermont	$30,240	31	84
Virginia	$36,716	12	101
Washington	$37,475	10	103
West Virginia	$27,982	44	77
Wisconsin	$31,556	27	87
Wyoming	$28,025	42	77
United States [2]	**$36,214**	**—**	**100**
Dist of Columbia	$56,024	—	155
Puerto Rico	$19,725	—	54

[1] 100 equals United States indicator value

[2] Includes the 50 states and the District of Columbia

Population Above Poverty

Definition

The U.S. Census Bureau recommends using 3-year averages of poverty rates for comparisons across states. The average poverty rate for each state for the years 1999–2001 as furnished by the U.S. Census Bureau was the basic data used for this metric. The percent of the population living above the federal poverty threshold was calculated by subtracting the percent of the population living below the poverty threshold from 100 percent. This form of the metric was selected in place of the more common estimate of the percent of the population living in poverty because it demonstrates a direct, rather than an inverse, relationship with the goals of economic development.

The federal poverty threshold used by the U.S. Census Bureau is adjusted annually. The threshold of money income that is used to define who is poor varies by the size of the family, age of the householder, and the number of related children under 18 years of age. For 2001, the poverty threshold varied over an annual income range from $9,000 to nearly $40,000. A detailed matrix defining the poverty threshold can be obtained from the U.S. Census Bureau or on the web at http://www.census.gov/hhes/poverty/threshld/thresh01.html.

Relevance

The percent of the population living above the federal poverty threshold provides some indication of how widely the basic needs of a state's population are being met.

The percent of the total U.S. population living above the poverty threshold during the 1999 to 2001 period was 88.4%. For the 50 states, the median value for the percent of each state's population living above poverty during this period was 89.7%, but the values for individual states ranged from 81.2% to 93.8%. The states with the highest percentage of their residents living above the poverty threshold for these three years were New Hampshire, Minnesota, and Maryland.

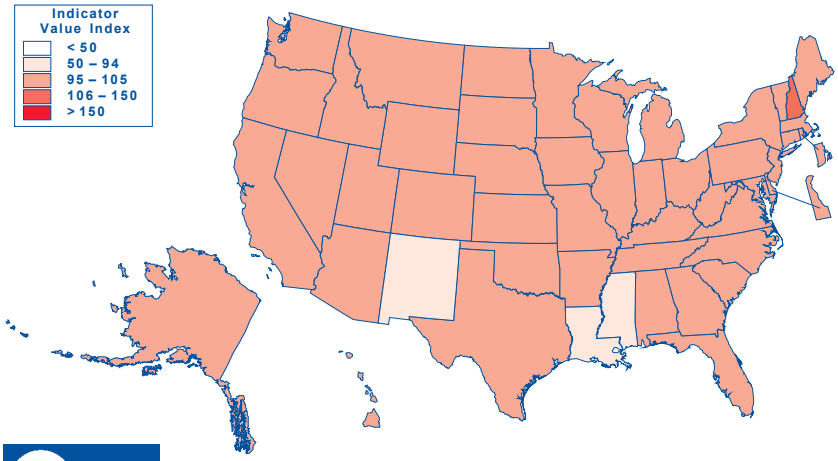
Based upon data furnished by the U.S. Census Bureau, about 32.9 million people were living below the poverty line in 2001, which is 1.3 million more than in 2000. The percentage of children under the age of 18 living above the threshold remained unchanged at 83.8% in both 2000 and 2001. The percentage of Blacks, Hispanics, and Asians and Pacific Islanders living above the threshold also did not change between 2000 and 2001. However, the percentage of non-Hispanic Whites living above the threshold declined from 92.6% in 2000 to 92.2% in 2001.

Data Considerations and Limitations

Official poverty estimates are made by the U.S. Census Bureau from data collected during the Current Population Survey Annual Demographic Supplements (CPS ADS). Two significant changes were made in the way these estimates were made for 2001. First, the 2001 estimates use population estimates based on the 2000 Census. Weighting the estimates with Census 2000 population controls, instead of the 1990 Census controls used in previous reports, had only a very minimal effect on the poverty rates changing them by 0.2 percentage points or less. Data for all three years have been recalculated to reflect the use of the 2000 population controls.

Second, in 2001 the U.S. Census Bureau tested a sample expansion of 28,000 households to the CPS ADS. The original sample size of approximately 50,000 households was increased to approximately 78,000 households. This sample expansion was primarily designed to improve the reliability of the state estimates of children's health insurance coverage, but the larger sample size also improved the reliability of other national estimates.

It should be remembered that poverty estimates are based upon interviewing a sample of the population. While respondents provide answers to the best of their ability, the resulting poverty estimates may differ from the actual values.



Source of Data

National, state and local area data on the percent of the population living in poverty can be accessed electronically at <http://www.census.gov/hhes/www/poverty.html>.

Percent of the Population Above Poverty: U.S. Census Bureau. (2002, September). *Poverty in the United States: 2001, Table 4*. <http://www.census.gov/prod/2002pubs/p60-219.pdf> (2003, August 8); U.S. Census Bureau, Population Division. American Factfinder, Census 2000 Summary File 3 (SF 3): P87. POVERTY STATUS IN 1999 BY AGE (for Puerto Rico). <http://factfinder.census.gov> (2003, November 20).

Technology Administration

Percent of the Population Living Above the Federal Poverty Threshold: 1999–2001

STATE	Percent of Population Living Below Poverty	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	14.8%	85.2%	44	96
Alaska	7.9%	92.1%	7	104
Arizona	12.9%	87.1%	37	99
Arkansas	16.3%	83.7%	47	95
California	13.1%	86.9%	39	98
Colorado	9.0%	91.0%	13	103
Connecticut	7.4%	92.6%	4	105
Delaware	8.5%	91.5%	11	104
Florida	12.0%	88.0%	31	100
Georgia	12.6%	87.4%	34	99
Hawaii	10.4%	89.6%	27	101
Idaho	12.7%	87.3%	35	99
Illinois	10.2%	89.8%	22	102
Indiana	7.9%	92.1%	7	104
Iowa	7.7%	92.3%	5	104
Kansas	10.1%	89.9%	21	102
Kentucky	12.4%	87.6%	32	99
Louisiana	17.5%	82.5%	49	93
Maine	10.3%	89.7%	25	101
Maryland	7.3%	92.7%	3	105
Massachusetts	10.2%	89.8%	22	102
Michigan	9.7%	90.3%	17	102
Minnesota	6.8%	93.2%	2	105
Mississippi	16.8%	83.2%	48	94
Missouri	10.2%	89.8%	22	102
Montana	14.4%	85.6%	43	97
Nebraska	9.7%	90.3%	17	102
Nevada	9.0%	91.0%	13	103
New Hampshire	6.2%	93.8%	1	106
New Jersey	7.7%	92.3%	5	104
New Mexico	18.8%	81.2%	50	92
New York	14.1%	85.9%	41	97
North Carolina	12.9%	87.1%	37	99
North Dakota	12.4%	87.6%	32	99
Ohio	10.8%	89.2%	29	101
Oklahoma	14.3%	85.7%	42	97
Oregon	11.8%	88.2%	30	100
Pennsylvania	9.2%	90.8%	16	103
Rhode Island	10.0%	90.0%	20	102
South Carolina	12.7%	87.3%	35	99
South Dakota	9.0%	91.0%	13	103
Tennessee	13.2%	86.8%	40	98
Texas	15.2%	84.8%	45	96
Utah	8.0%	92.0%	9	104
Vermont	9.8%	90.2%	19	102
Virginia	8.0%	92.0%	9	104
Washington	10.4%	89.6%	27	101
West Virginia	15.6%	84.4%	46	95
Wisconsin	8.6%	91.4%	12	103
Wyoming	10.3%	89.7%	25	101
United States [3]	**11.6%**	**88.4%**	**—**	**100**
Dist of Columbia	16.1%	83.9%	—	95
Puerto Rico [4]	48.2%	51.8%	—	59

[1] 100% - % of Population Living Below Poverty

[2] 100 equals United States indicator value

[3] Includes the 50 states and the District of Columbia

[4] The reported poverty rate for Puerto Rico is only for 1999 (not a 3-year average)

Per Capita Income

Definition

State per capita personal income is calculated by dividing the annual total personal income of the residents of the state by the resident population of the state as of July 1, 2002. Personal income is the income received by all persons from participation in production, from government and business transfer payments, and from government interest. Personal income is the sum of net earnings by place of residence, rental income of persons, personal dividend income, personal interest income, and transfer payments. Net earnings is earnings by place of work—the sum of wage and salary disbursements (payrolls), other labor income, and proprietors' income—less personal contributions for social insurance, plus an adjustment to convert earnings by place of work to a place-of-residence basis. Personal income is measured before the deduction of personal income taxes and other personal taxes and is reported in current dollars (no adjustment is made for price changes). It does not include the wages and salaries of foreign residents who work in the U.S. or of U.S. residents who are temporarily working abroad.

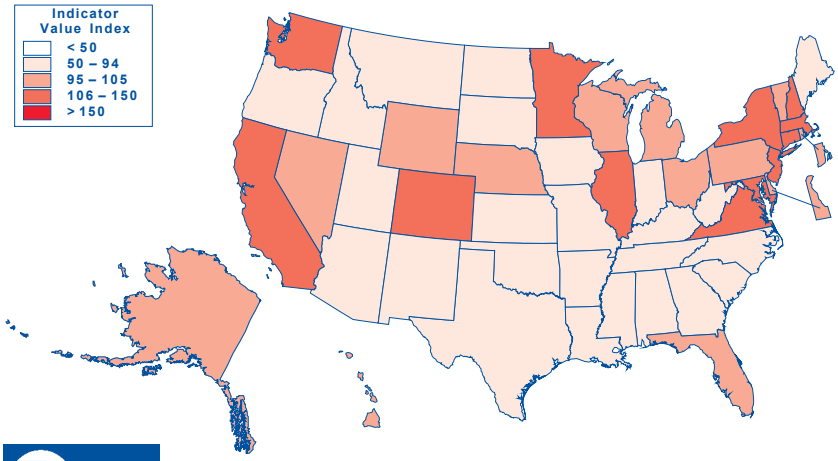
Relevance

State per capita personal income is used by both the public and private sectors to track the income of people who live or work in a state. These estimates are used in econometric models and as the basis for allocating federal funds. For instance, in fiscal year 1996, the distribution of $122 billion in federal funds was affected by the estimates of state per capita personal income (http://www.bea.doc.gov/bea/regional/articles/spi2997/maintext.htm).

The national average per capita income in 2002 was $30,832. The median per capita income for the 50 states in 2002 was $29,079. Earnings in high cost-of-living states tend to be higher than in low cost-of-living states. In 2002, the states with the highest per capita incomes were Connecticut, New Jersey, and Massachusetts.

Data Considerations and Limitations

The Bureau of Economic Analysis (BEA) uses data from a variety of sources to compute state per capita personal income. Many of these sources reflect the state in which the income is earned rather than the state in which the individual resides. BEA uses a well-defined allocation methodology to assign this income to individual states and to keep the total of all states' personal income consistent with national estimates. This process is intended to minimize the effect of cross-border transfers that are particularly significant in small states.



Source of Data

These data can be obtained electronically from the Bureau of Economic Analysis, U.S. Department of Commerce at http://www.bea.doc.gov/bea/regional/spi>. Per capita personal income was computed using state population estimates from the U.S. Census Bureau available as of October 2001.

Per Capita Income: U.S. Department of Commerce, Bureau of Economic Analysis. (2003, July 23). Annual State Personal Income. <http://www.bea.doc.gov/bea/regional/spi/> (2003, July 24); Puerto Rico Planning Board, Program of Economic and Social Planning. *Appendix Statistics: Table 1—Selected Series of Income and Product, Total and Per Capita*. <http://www.jp.gobierno.pr> (2003, October 2).

Technology Administration

Per Capita Personal Income: 2002

STATE	INDICATOR VALUE	Rank	Indicator Value Index [1]
Alabama	$25,096	43	81
Alaska	$31,792	14	103
Arizona	$26,157	38	85
Arkansas	$23,417	49	76
California	$32,898	10	107
Colorado	$33,170	9	108
Connecticut	$42,829	1	139
Delaware	$32,307	13	105
Florida	$29,559	22	96
Georgia	$28,703	28	93
Hawaii	$30,040	20	97
Idaho	$25,042	44	81
Illinois	$33,320	8	108
Indiana	$28,233	31	92
Iowa	$28,141	32	91
Kansas	$28,838	27	94
Kentucky	$25,657	39	83
Louisiana	$25,370	41	82
Maine	$27,804	33	90
Maryland	$36,121	4	117
Massachusetts	$39,044	3	127
Michigan	$30,222	18	98
Minnesota	$33,895	7	110
Mississippi	$22,370	50	73
Missouri	$28,841	26	94
Montana	$24,906	45	81
Nebraska	$29,544	23	96
Nevada	$30,169	19	98
New Hampshire	$34,276	6	111
New Jersey	$39,567	2	128
New Mexico	$23,908	47	78
New York	$35,708	5	116
North Carolina	$27,566	34	89
North Dakota	$26,567	37	86
Ohio	$29,317	25	95
Oklahoma	$25,136	42	82
Oregon	$28,533	29	93
Pennsylvania	$31,663	15	103
Rhode Island	$31,107	16	101
South Carolina	$25,395	40	82
South Dakota	$26,694	36	87
Tennessee	$27,378	35	89
Texas	$28,401	30	92
Utah	$24,157	46	78
Vermont	$29,464	24	96
Virginia	$32,676	11	106
Washington	$32,661	12	106
West Virginia	$23,628	48	77
Wisconsin	$29,996	21	97
Wyoming	$30,494	17	99
United States [2]	**$30,832**	**—**	**100**
Dist of Columbia	$43,371	—	141
Puerto Rico	$11,069	—	36

[1] 100 equals United States indicator value

[2] Includes the 50 states and the District of Columbia

Labor Force Participation

Definition

The participation rate represents the proportion of the population that is in the labor force. In this case, population means civilian, non-institutional population and is restricted to persons who are all of the following: 16 years of age or older, residing in the 50 states or the District of Columbia, not inmates of institutions (e.g., penal or mental facilities or homes for the aged), and not on active duty in the Armed Forces.

From this population, the labor force is comprised of all persons classified as employed or unemployed. Employed persons are those who did any work at all (at least 1 hour) as paid employees, worked in their own business or profession or on their own farm, or worked 15 hours or more as unpaid workers in an enterprise operated by a member of the family or were not working but had jobs or businesses from which they were temporarily absent because of vacation, illness, bad weather, child-care problems, maternity or paternity leave, labor-management dispute, job training, or other family or personal reasons. Unemployed persons are all persons who had no employment, were available for work, except for temporary illness, and had made specific efforts to find employment.

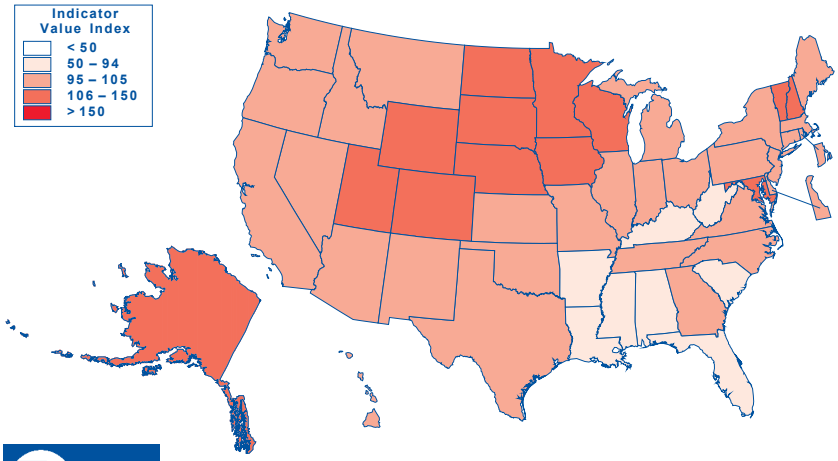
Relevance

The civilian non-institutional population of the U.S. age 16 and older was 217.9 million in 2002 for the 50 states. The civilian labor force totaled 145.1 million making the overall U.S. labor force participation rate 66.6%. This represented a decline of 0.3% from the value of 66.9% reported in 2001. States' 2002 labor participation rates ranged from 56.0% to 75.7% with a median value of 67.4%. The states with the highest labor force participation rate in 2002 were Minnesota, South Dakota, and Iowa.

The labor force participation rate can be affected by the number of individuals who are students or retirees or who are engaged in providing care for their own children or for an incapacitated relative. Typically, the labor force participation rate for males is higher than for females.

Data Considerations and Limitations

These data represent estimates derived from the Current Population Survey, a sample survey conducted monthly for the Bureau of Labor Statistics by the U.S. Census Bureau. Annual averages are calculated using data from the expanded 78,000-household sample for all the months of 2002. Data for Puerto Rico are provided by the Puerto Rico Department of Labor and Human Resources. Because these data are estimates rather than a complete census of the population, they are subject to sampling error.



Source of Data

Labor Force Participation: U.S. Department of Labor, Bureau of Labor Statistics. Local Area Unemployment Statistics (not seasonally adjusted). <http://data.bls.gov/labjava/outside.jsp?survey=la> (2003, March 27).

Technology Administration

Labor Force Participation Rate: 2002

STATE	Civilian Labor Force, thousands	Non-inst. Civilian Pop., 16+ Years of Age, thousands	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	2,103	3,432	61.3%	47	92
Alaska	323	449	71.9%	6	108
Arizona	2,672	4,033	66.2%	33	100
Arkansas	1,285	2,060	62.4%	45	94
California	17,405	26,083	66.7%	29	100
Colorado	2,437	3,394	71.8%	7	108
Connecticut	1,773	2,623	67.6%	24	102
Delaware	423	622	68.0%	21	102
Florida	8,084	12,926	62.5%	44	94
Georgia	4,292	6,337	67.7%	23	102
Hawaii	582	889	65.5%	37	98
Idaho	684	989	69.2%	16	104
Illinois	6,378	9,524	67.0%	28	101
Indiana	3,175	4,656	68.2%	20	102
Iowa	1,667	2,277	73.2%	3	110
Kansas	1,414	2,041	69.3%	15	104
Kentucky	1,966	3,184	61.8%	46	93
Louisiana	2,006	3,336	60.1%	49	90
Maine	686	1,034	66.4%	31	100
Maryland	2,898	4,126	70.2%	13	106
Massachusetts	3,486	5,046	69.1%	17	104
Michigan	5,001	7,650	65.4%	39	98
Minnesota	2,918	3,855	75.7%	1	114
Mississippi	1,298	2,136	60.8%	48	91
Missouri	2,990	4,330	69.1%	18	104
Montana	464	706	65.7%	36	99
Nebraska	959	1,311	73.2%	4	110
Nevada	1,122	1,616	69.4%	14	104
New Hampshire	706	989	71.3%	8	107
New Jersey	4,368	6,585	66.3%	32	100
New Mexico	878	1,382	63.5%	41	95
New York	9,362	14,816	63.2%	42	95
North Carolina	4,171	6,262	66.6%	30	100
North Dakota	346	492	70.3%	12	106
Ohio	5,828	8,701	67.0%	27	101
Oklahoma	1,693	2,619	64.6%	40	97
Oregon	1,834	2,716	67.5%	25	101
Pennsylvania	6,290	9,607	65.5%	38	98
Rhode Island	556	840	66.2%	34	100
South Carolina	1,968	3,145	62.6%	43	94
South Dakota	421	574	73.3%	2	110
Tennessee	2,926	4,448	65.8%	35	99
Texas	10,751	15,849	67.8%	22	102
Utah	1,180	1,655	71.3%	10	107
Vermont	349	489	71.3%	9	107
Virginia	3,735	5,454	68.5%	19	103
Washington	3,097	4,605	67.2%	26	101
West Virginia	804	1,436	56.0%	50	84
Wisconsin	3,028	4,190	72.3%	5	109
Wyoming	270	383	70.6%	11	106
50 States	**145,055**	**217,902**	**66.6%**	**—**	**100**
Dist of Columbia	304	460	66.1%	—	99
Puerto Rico	1,356	2,934	46.2%	—	69

[1] (Civilian Labor Force / Non-inst Civilian Pop 16+ Years) x 100%

[2] 100 equals 50-state indicator value

Work Force Employment

Definition

The percent of the civilian work force that is employed is defined as 100% minus the percent of the work force that is unemployed. This metric was selected in place of the more common estimate of unemployment rate because it demonstrates a direct, rather than an inverse, relationship with the goals of economic development.

The civilian work force is defined as the number of individuals 16 years of age and older who are not institutionalized or serving in the military and who are employed or actively seeking work.

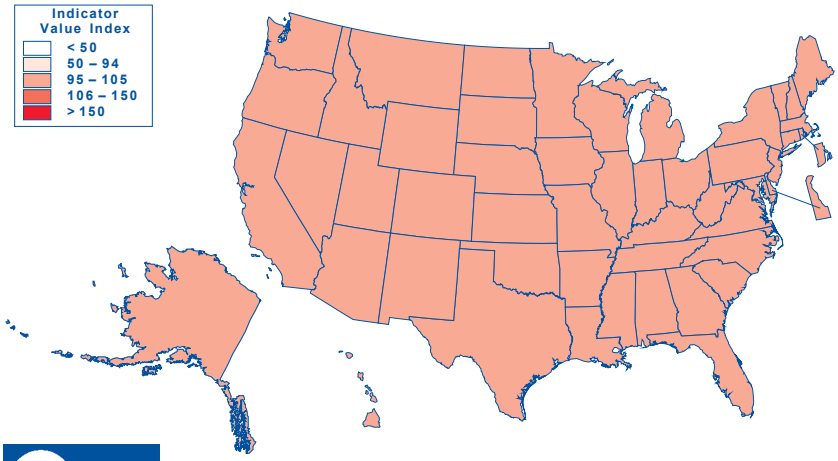
Relevance

The percent of the civilian work force that is employed reflects the extent to which a state's economy is providing work for those who seek it.

In 2002, the U.S. civilian work force totaled 145.1 million individuals in the 50 states, with 136.7 million being classified as employed and 8.4 million as unemployed. The national average for the work force employment level in 2002 was 94.2%. This value represented a decline of 1.0% from the value reported in 2001. The median state value for work force employment level in 2002 was 94.5% although it ranged from 92.3% to 96.9% for individual states. The states with the highest work force employment levels in 2002 were South Dakota, Nebraska, and Vermont.

Data Considerations and Limitations

The unemployment rate used in this calculation is an estimate made by the Bureau of Labor Statistics (BLS) based on models specific for each state. These models use the relationship between the state's monthly unemployment insurance claims data and the Current Population Survey (CPS), a computer-assisted survey covering 78,000 households conducted monthly for BLS by the U.S. Census Bureau. The state models used by the BLS also incorporate trend and seasonal components to make them consistent with other employment data. The estimates for Puerto Rico are based on a monthly household survey similar to the CPS conducted by the Puerto Rico Department of Labor and Human Resources.



Source of Data

Work Force Employment: U.S. Department of Labor, Bureau of Labor Statistics. Local Area Unemployment Statistics (not seasonally adjusted). <http://data.bls.gov/labjava/outside.jsp?survey=la> (2003, March 27).

Technology Administration

Percent of the Civilian Work Force Employed: 2002

STATE	Unemployment Rate	INDICATOR VALUE [1]	Rank	Indicator Value Index [2]
Alabama	5.9%	94.1%	35	100
Alaska	7.7%	92.3%	50	98
Arizona	6.2%	93.8%	41	100
Arkansas	5.4%	94.6%	23	100
California	6.7%	93.3%	45	99
Colorado	5.7%	94.3%	30	100
Connecticut	4.3%	95.7%	10	102
Delaware	4.2%	95.8%	7	102
Florida	5.5%	94.5%	25	100
Georgia	5.1%	94.9%	17	101
Hawaii	4.2%	95.8%	7	102
Idaho	5.8%	94.2%	33	100
Illinois	6.5%	93.5%	44	99
Indiana	5.1%	94.9%	17	101
Iowa	4.0%	96.0%	4	102
Kansas	5.1%	94.9%	17	101
Kentucky	5.6%	94.4%	29	100
Louisiana	6.1%	93.9%	37	100
Maine	4.4%	95.6%	11	101
Maryland	4.4%	95.6%	11	101
Massachusetts	5.3%	94.7%	22	101
Michigan	6.2%	93.8%	41	100
Minnesota	4.4%	95.6%	11	101
Mississippi	6.8%	93.2%	47	99
Missouri	5.5%	94.5%	25	100
Montana	4.6%	95.4%	15	101
Nebraska	3.6%	96.4%	2	102
Nevada	5.5%	94.5%	25	100
New Hampshire	4.7%	95.3%	16	101
New Jersey	5.8%	94.2%	33	100
New Mexico	5.4%	94.6%	23	100
New York	6.1%	93.9%	37	100
North Carolina	6.7%	93.3%	45	99
North Dakota	4.0%	96.0%	4	102
Ohio	5.7%	94.3%	30	100
Oklahoma	4.5%	95.5%	14	101
Oregon	7.5%	92.5%	49	98
Pennsylvania	5.7%	94.3%	30	100
Rhode Island	5.1%	94.9%	17	101
South Carolina	6.0%	94.0%	36	100
South Dakota	3.1%	96.9%	1	103
Tennessee	5.1%	94.9%	17	101
Texas	6.3%	93.7%	43	99
Utah	6.1%	93.9%	37	100
Vermont	3.7%	96.3%	3	102
Virginia	4.1%	95.9%	6	102
Washington	7.3%	92.7%	48	98
West Virginia	6.1%	93.9%	37	100
Wisconsin	5.5%	94.5%	25	100
Wyoming	4.2%	95.8%	7	102
United States [3]	**5.8%**	**94.2%**	**—**	**100**
Dist of Columbia	6.4%	93.6%	—	99
Puerto Rico	12.3%	87.7%	—	93

[1] (100% – % Unemployment Rate) x 100%

[2] 100 equals United States indicator value

[3] Includes the 50 states and the District of Columbia